NOV 3 1934

FOOD INDUSTRIES

THE NEWS OF • PRODUCTION • ENGINEERING • DISTRIBUTION

BAKERY PRODUCTS

BEVERAGES

CANNED AND PRESERVED FOODS

CONFECTIONERY AND CHOCOLATE

DAIRY PRODUCTS AND ICE CREAM

FATS AND OILS

FLOUR AND CEREAL PRODUCTS

MEATS AND MEAT PRODUCTS

OTHER FOODS AND SPECIALTIES

OPPORTUNITY

Unexpected, but much needed, is the change of attitude which has come over Washington—a change of greater importance than all else at the moment.

Business is at last being cultivated. The Administration is beginning to realize that the more it bedevils business, the greater will be the unemployment, the greater will be the need for relief, and the greater will be the budget deficit.

This change of heart spells opportunity for business to get in and help to shape events along workable lines.

Such an opportunity must not be missed —nor muffed.

NOVEMBER 1934

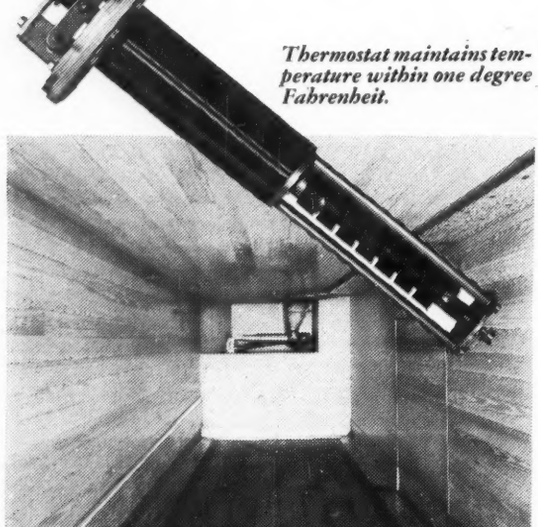
McGRAW-HILL PUBLISHING COMPANY, INC.

Phantom view of Statotherm-equipped Mack refrigerator truck. Refrigerant is carried in ice compartment back of seat. Warm air is collected by duct along left side and drawn under cooling plate and up vertical duct by blower which expels the cooled air through cold-air duct on ceiling. Thermostat, next to blower, controls blower motor through relay controller.

AT LAST...

A REFRIGERATED TRUCK WITH FIXED AND UNIFORM TEMPERATURE

Thermostat maintains temperature within one degree Fahrenheit.



Interior view. Cold-air duct is along right side of ceiling, and warm-air duct on lower left side. Positive air circulation maintains uniform temperature throughout the load.

TRUCK transportation of perishable foods, a most profitable market, has long been undeveloped fully for one reason —lack of equipment for positive and exact control of temperature for indefinite periods. *The Statotherm,* designed and perfected by Mack, makes it possible to hold a load within one degree of any selected temperature.

The Statotherm saves more than it costs to operate, and achieves earnings which render its price unimportant. For instance: fresh fish may normally be bought of fishermen along the New Jersey coast for a few cents a pound. In a city 400 miles away, the product commands a wholesale price three times that amount. It is now possible to take full advantage of this liberal profit with Statotherm equipment. And the thermostat can easily be adjusted at another temperature for a profitable *return load.*

The Mack Company has developed special types of refrigerator bodies expressly adapted to Statotherm control. However, Statotherm units may be installed in existing truck equipment at small cost. Write for illustrated brochure.

FEATURES OF STATOTHERM CONTROL

1. Positive and exact control of temperature within 1 deg. F.
2. Uniform temperature throughout load.
3. Adjustable instantly to any required temperature.
4. Adaptable to and economical of any type of refrigerant.
5. Simple and reliable—low operating cost.
6. Independent operation —standing or running —truck or trailer.
7. Control of dehydration.

Mack

MACK TRUCKS, INC., 25 BROADWAY, NEW YORK CITY

THIS MONTH

articles about

BAKERY PRODUCTS
Pages 500, 503, 513

BEVERAGES
Pages 489, 492

CANNED AND PRESERVED FOODS
Pages 486, 496, 503, 507

CONFECTIONERY AND CHOCOLATE
Pages 500, 503, 513

DAIRY PRODUCTS AND ICE CREAM
Pages 500, 503, 508, 513

FLOUR AND CEREAL PRODUCTS
Pages 490, 503

MEATS AND MEAT PRODUCTS
Pages 490, 503, 508, 510

OTHER FOODS AND SPECIALTIES
Pages, 486, 490, 495, 500

GENERAL
Pages 496, 498, 505, 508, 510, 513

❖

Accident Preventing
Pages 505, 513

Distributing
Pages 490, 508, 510, 513

Fermenting
Pages 489, 492

Filling
Pages 486, 492, 513

Flavoring
Page 495

Fumigating
Page 503

Maintenance and Repairing
Pages 505, 513

Managing and Planning
Pages 486, 505, 508, 510

Materials Handling
Pages 486, 492, 513

Merchandising
Pages 486, 490, 496, 498, 508, 510

Mold Prevention
Page 503

Packaging
Pages 486, 500

Pest Controlling
Page 503

Raw-Material Selecting
Pages 486, 495, 500, 507

Refrigerating
Pages 503, 508, 510, 513

Sanitation
Pages 492, 503

Spoilage Preventing
Pages 500, 503, 507

Sterilizing
Pages 492, 503

Storage
Pages 492, 500

Trucking
Pages 505, 508, 510

FOOD INDUSTRIES

NEWS OF PRODUCTION • ENGINEERING • DISTRICTION

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Contents for November 1934

VOLUME 6 NUMBER 11

Why Bulk Mincemeat 486
BY WILLIAM R. McKELDIN

Beer Making—Not What It Used to Be 489
BY JOHN A. W. HARTUNG

Beware of the Dog Food Business 490
BY M. C. SCHWARTZ

Better Sanitation With Concrete Fermentation Tanks 492

Sources of Variation in Garlic Flavor 495
BY JOHN B. ROLLE

The Dumb Housewife Looks at the Labels 496

Demonstrating in Store Windows 498
BY ERNEST A. DENCH

Chocolate—A Food, a Confection, an Ingredient 500
BY BENJAMIN J. ZENLEA

Control of Micro-organisms and Insect Pests 503
BY HARRY STINER

Truck Accidents Reduced by 78 Per Cent 505
BY H. T. EGGERT

Getting California Fruits Into Foreign Markets 507
BY E. M. MRAK, S. V. CAMPBELL AND H. P. ROYER

Truck Bodies to Fit Manufacturers' Needs 508

Automotive Forum 510

New Equipment to Be Seen at Bottlers' Exposition 521

Editorials 483
Ideas From Practical Men 513
News 514
Men, Jobs and Companies 522
Business Trends 524
New Products 526
New Equipment 528
Manufacturers' Catalogs 529

Patent Digest 530

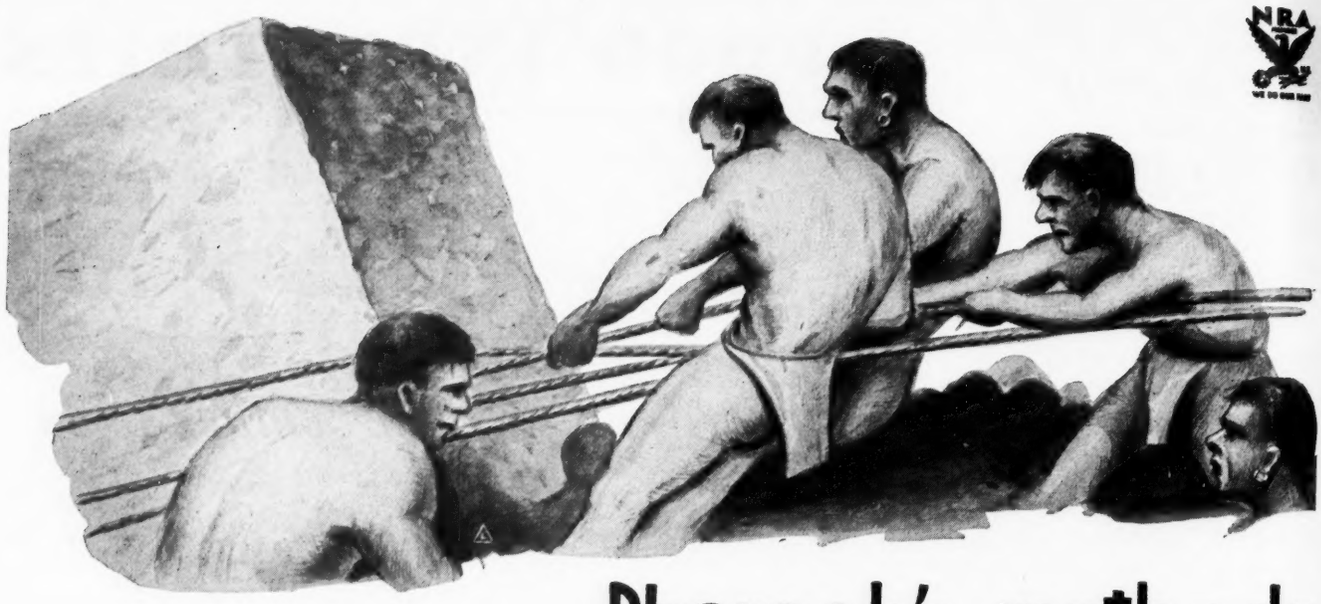
Copyright, 1934, by McGraw-Hill Publishing Co., Inc.

Contents indexed monthly in the Industrial Arts Index

FOOD INDUSTRIES. Published monthly; price 25c. a copy. Subscription rates: United States, Mexico and Central and South American countries, $2 a year. Canada, including duty, $2.50 a year. All other countries, $3 a year or 12 shillings. Entered as second-class matter April 30, 1929, at Post Office at New York, N. Y., under the act of March 3, 1879. Printed in U. S. A. Cable address: "McGrawhill, New York." Member of A.B.P. Member of A.B.C.

McGraw-Hill Publishing Company, Inc., 330 West 42d Street, New York, N. Y.

Branch Offices: 520 North Michigan Ave., Chicago; 883 Mission St., San Francisco; Aldwych House, Aldwych, London, W. C. 2; Washington; Philadelphia; Cleveland; Detroit; St. Louis; Boston; Greenville, S. C. James H. McGraw, Chairman of the Board; Malcolm Muir, President; James H. McGraw, Jr., Vice-President and Treasurer; B. R. Putnam, Secretary.



Pharaoh's methods have no place in modern industry!

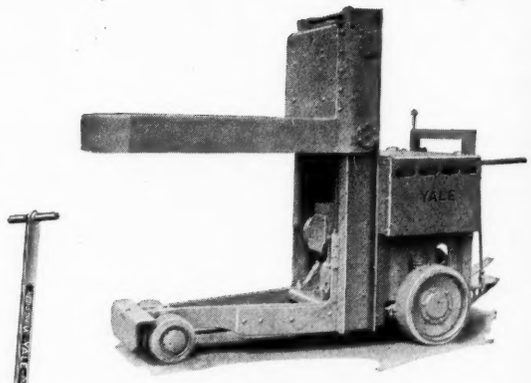
PHARAOH'S methods, no doubt, were effective—as the pyramids still attest—but in his scheme of lifting and hauling materials for building there was no consideration of time or economy. He had no competition to meet.

Today speed and efficiency are of paramount importance and industrial executives must be on the alert for every opportunity to speed up the flow of production—to prevent waste—to promote the efficiency of men and machines—to cut dollars from costs and add them to profits.

The difference between profit and loss may be small—it may exist in your present method of lifting and hauling and storing materials within your plant. That is the most likely place to look for opportunities to economize.

Like thousands of others you, too, may find the solution to your materials handling problems—and to excessive operating costs—in the Yale Truck and Skid Platform System.

Investigate what this modern system can do for you—call the nearest Yale representative.



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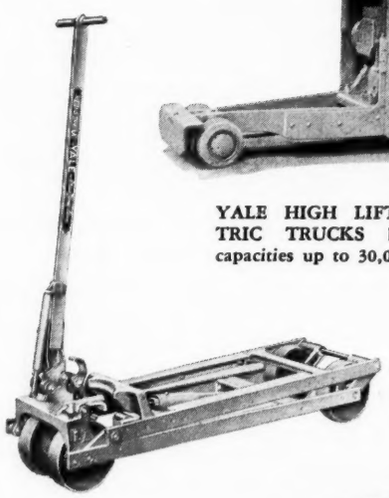
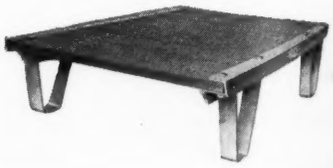


YALE RED STREAK HAND LIFT TRUCKS 5,000 lbs. capacity.



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FOOD INDUSTRIES

THE NEWS OF • PRODUCTION • ENGINEERING • DISTRIBUTION

Established 1928—McGraw-Hill Publishing Company, Inc.
Volume 6 Number 11

New York, November, 1934 . . . Laurence V. Burton, Editor

Don't Muff This Opportunity

WITHIN THE PAST MONTH a decided change has come over the attitude of the Administration toward business. There can be no doubt that Washington is trying to gain the good will of business leaders. From the White House down—though not yet very far down—it is increasingly apparent that the business man and industrial leader is being assiduously cultivated.

Aroused business has at last convinced the Administration that recovery cannot be had without a generous admixture of business common sense in its measures. Strange to relate, constructive criticism is beginning to meet a real, not a sham, response. Instead of arousing a Johnsonesque barrage of invective, criticism is gaining a very attentive and thoughtful hearing.

It is further apparent that the Administration realizes that organized labor leaders are exhibiting a selfishness that is more likely to wreck the possibility of recovery than any short-sighted reactionary attitude of capitalists.

This lending of an attentive ear in Washington creates an opportunity that business cannot afford to miss—or muff. Constructive criticism rather than bitter criticism should be the order of the day.

Business should not forget that laws like A.A.A. and N.I.R.A. can be changed by an act of Congress, but that public opinion and labor opinion are not, and cannot, be changed by legislative action.

Standing pat has created the opportunity to bring sanity into public affairs. It has opened the door. But further standing pat will jeopardize rather than help the situation. It is an old axiom of politics that "you can't beat something with nothing." Business must therefore now produce something to fight for, not against.

Business must have constructive plans with which to meet the current situation, for, unless Washington makes an "about-face" and again embraces the radical viewpoint, we can soon expect widespread calls to business to sit in and to help direct. When that call comes, we must recognize that vast social forces are at work which must be guided and shaped to serve workable ends.

Of course, business must maintain a healthy skepticism toward current Washington overtures, yet it cannot afford to remain too aloof.

FOOD INDUSTRIES has been critical of the recovery program not for the purpose of wrecking it or preventing its success but because we have realized from the outset that it could not succeed on its hastily improvised basis. Our attitude today is no less critical when we detect the opportunity, and counsel that business should take advantage of this unexpected friendliness from Washington.

It is a real opportunity. Business cannot afford to miss it. At the same time we must be sure that Washington is sincere, not merely political.

AS IT LOOKS TO US

Progress in Compulsory Grading . . .

A PLAY IN ONE ACT

SCENE: *Class room in Department of Agriculture—B.A.E.*

CHARACTERS:

FACULTY — Deputy Administrator Armin Riley, principal; Doctors C. W. Kitchen, Paul Williams and Wells A. Sherman, Department of Agriculture, Bureau of Agricultural Economics, instructors.

PUPILS—3,000 members of the canning industry.

VISITORS—Messrs. Hauck and Ross, of the Consumers' Advisory Board, representing 60,000,000 totally ignorant, inexperienced housewives who (according to the plot) have never seen a can of nuthin.

Class is called to order sternly by Principal Riley: "Children, the lesson to-day is on consumers' grades on labels. Dr. Paul Williams will take over the class."

DR. WILLIAMS: Now, my dears, do you know your A B C's?

PRECOCIOUS PUPIL: Which ones, teacher?

DR. W.: Don't try to be funny.

P. P.: But, teacher, in August our alphabet had 22 complete enforceable definitions. Dr. Sherman told us so.

DR. W.: Did you tell them that, Dr. Sherman?

DR. SHERMAN: Yes, I said definitions for 22 products had been developed that are—pardon me, were — enforceable, absolutely, without equivocation.

DR. W.: H'mmm.

P. P.: But, Dr. Sherman, those August definitions have all been withdrawn.

DR. W.: Oh, of course. This is October.

P. P.: But, teacher, do we get a new alphabet every month?

DR. W.: Now, now. We won't go into that.

P. P.: But—

PRINCIPAL RILEY (rising sternly): Have you read the "Children's Conduct Code?" — No! — I thought so. Now you sit down and be quiet. Proceed, Dr. Williams.

P. P.: Is that a *voluntary* code too?

DR. W.: Those who know the NEW definition for tomatoes, hold up their right hand.

[No hand raised]

P. P.: Perhaps you can tell us the definition, Dr. Williams?

DR. W.: (Registers alarm, turns to Dr. Kitchen)

DR. KITCHEN (Turns to Dr. Sherman who shakes his head in the negative, then aside to Dr. Williams): No; tell them we'll have the definition before Christmas vacation.

DR. W.: We will have the definition next term.

P. P.: Well, how about the other 21 complete definitions?

DR. W.: Tut, tut, children. School is dismissed.

Contamination by Steam . . .

Direct introduction of live steam into foods is a common processing practice in many plants. Usually it is accomplished with splendid results. But at times it has been known to lead to grief.

As long as the water from which the steam is made is pure, the steam will usually be safe. Sometimes, however, traces of chlorine or oil get into the boiler water, with very bad results as far as the food flavor is concerned. Then, too, any condensate in the steam pipes may pick up minute quantities of rust.

Steam separators and filters, always necessary in this service, usually remove the other contaminants, but only activated charcoal filters on the water supply will eliminate chlorine and its derivates, which are so ruinous to good flavor.

One N.R.A. Success: Price Fixing a Failure

A certain degree of dubious satisfaction is derived by many from the end of the first phase of N.R.A. Some incorrigible optimists actually state that they believe that N.R.A. is worth all it has cost in human energy, worry, strikes and dollars.

To accept such a statement without question is to miss the real point of the comment. Such a commentary on the experiment called N.R.A. demands an explanation—particularly when one knows those persons to be critics of N.R.A.

If we continually keep in mind that N.R.A. is an experiment, that as an experiment there is nothing sacrosanct about it, that there never was and never will be a holy experiment, then we can understand the paradoxical statement that N.R.A. is a success because it has failed.

In any experiment there is no purpose other than to test a theory. Somebody has an idea of how something ought to work. The idea is put to a test. If the test is correctly planned, the validity or falsity of the idea is established. And that is all there is to the principle of research. However, it should also be borne in mind that the actual test is the last thing to be done. By far the great majority of imaginative ideas are not practical and usually are discarded at the outset before the research has progressed farther than a mental concept or a diagram on paper, which is criticized in the light of accumulated human experience and knowledge.

In the field of experimentation good research requires an abundant flow of good ideas, a maximum of critical examination of those ideas on paper, and a minimum of actual tests. The test or proof is resorted to only when the idea or theory cannot be otherwise proved to be unworkable or when it cannot be shown to be merely a redemonstration of what we already know.

What has this to do with N.R.A.? For years, many a man has clung to the idea that price fixing would be a good thing for business and for everybody. Most of those who have held that idea—a group not by any means confined solely to business men—have been persons who, by lack of vision, philosophic perception, education, training or experience, have been unable to think it clear through. Like those who thought prohibition

would bring temperance, they seem to think that price fixing will always bring profits.

To blame it all on business is manifestly unfair. A year and a half ago we were present at an affair in Washington, where speakers may not be quoted, and heard the following:

Question: "Will NIRA mean price fixing?"

Answer: "I hope so! I wrote that part of the law with that idea in mind."

The speaker was *not* a business man.

Price fixing has been tried—and found wanting. True, prices have been fixed in a so-so fashion in only a few codes. But the hoped-for profits did not materialize. The net result was mostly loss of volume, followed by chiseling to get it back, and the like. If our government or some of the "big shots" of the country were as wise as they ought to have been, this result could easily have been foreseen.

FOOD INDUSTRIES pointed out, long ago, that inter-industry competition rendered absolutely hopeless the idea that profits could be assured by price fixing, that as long as the products of one industry could be freely substituted for the products of another, the industry which fixes prices is at the mercy of the competition of the other—if it is not actually committing economic suicide.

At this time we add another thought to the foregoing: If all the industries which are in direct competition were to fix prices, there is no power on earth which could *compel* customers to buy.

And that, in our opinion, is the basic weakness of N.R.A.

It is nonsense to believe that buyers will always pay any price asked. Certain enthusiasts have never learned the bitter fact that selling prices have no relationship whatsoever to costs.

The N.R.A. experiment debunked the theory that fixed prices make profits. It is too bad that the experiment has cost so much or that it had to be undertaken at all. But let us not forget the lesson.

Cheap Paint . . .

Six and nine dollars for a gallon of industrial white paint strike us as being rather stiff prices. However, upon visiting a Canadian ale brewery a few weeks ago we saw reasons why the brew master considers such priced paints as being "dirt cheap." In the 32 deg. F. fermentation rooms the wall surfaces looked as if the painters had been tipped off to leave the room upon our entrance. Yet the white enamel on the walls was declared to be seven months old and obtainable at "only $6 per gallon."

At other points along the way were cold-storage and steam-filled cooking rooms whose wall surfaces showed only slight loss of gloss and no signs of peeling or chipping. Inquiry brought the information that the walls had not been painted for four years and that the paint had cost $9 per gallon.

The prices paid for the paints come into prominence only because of the effect they had upon their buyer and user. Because he was paying a fancy price, the brew master first made sure that he was buying paints best suited for the use to which they were to be put. Second, he saw to it that the surfaces upon which they were to be used were put in first-class condition for painting.

Save the Volatiles . . .

One of the next constructive steps in the production of manufactured foods should be that of conferring upon factory-prepared foods an elusive something that cannot be attained in the home. It is only the part of wisdom to recognize that there are vast social forces afoot which will inevitably result in much greater leisure for a considerable sector of the population, and no great vision is required to translate this idea into more cooking at home. Of course, one hardly expects the drastic orders of a Mussolini to put women back into the kitchen in this country; but it must be admitted that current economic forces have a tendency to impose on us such ideas of the proper organization of human society.

Whether American food manufacturers share this view or not is of no great consequence, for every one of them is constantly seeking sound reasons for getting the American housewife out of her kitchen; or, at best, making it unnecessary for her to linger there for more than a minimum of time in the preparation of a meal.

No surer way exists for a manufacturer to maintain his prestige with the housewife than to produce better-tasting foods than can be prepared in the kitchen at home.

Better tasting foods mean better-flavored foods; and in this important respect the factory, with all its facilities, has not gone one step further than the humblest cook working with the most modest facilities. Throughout the centuries the food that comes to our tables has possessed only those natural flavors which accidentally remained after the food has been cooked.

Who has not sniffed the appetizing aroma of boiling catsup or tomato soup miles away from the plant; or detected the fine bouquet of fruits wafted away from a jelly factory; or felt the urge to eat at once after inhaling the vapors from a kettle of boiling beef? That which we measure in calories or B.t.u. remains, but that part of our food which adds to the zest of eating is most certainly being volatilized and cast into the atmosphere.

As a research project worthy of considerable thought and effort, it appears to FOOD INDUSTRIES that few problems offer greater possibilities of economic reward than this. Those industries which involve cooking, boiling or evaporation, with noticeable losses of delightful flavors and aromas to the atmosphere, should consider carefully what the food would taste like if they were retained.

Boiling in closed vessels equipped with reflux condensers, or evaporation carried out as a fractional distillation, may show the way to conserve the flavors that go so far to make the difference between good and indifferent foods. The value of saving the volatile parts of our foods is worthy of study by trained chemists.

Ice Cream and Oil Cooperate . . .

A new form of economy has been developed by an Eastern food company whose product, ice cream, is distributed largely in the summer time. Each autumn it is necessary to lay off a number of drivers. And then in the spring time it becomes necessary to find them again or train others to take their places.

To solve this problem, this ice cream manufacturer has made arrangements with a fuel oil company to employ its best drivers in the winter time, and send them back in the spring.

Although it is an experiment, there appears to be no good reason why it should not be a splendid success for both concerns, and a very happy arrangement for the drivers themselves.

By WILLIAM R. McKELDIN
President, Atmore & Son, Inc.
Philadelphia, Pa.

Why Bulk Mincemeat

Bulk mincemeat containers range from 5-lb. white-pine pails to 500-lb. white-oak barrels.

WHEN modern packaging invaded the mincemeat industry the demand was met with a product and a package that fulfilled all the requirements of the distributors, and, theoretically, the demands of the consumers. The product looked like mincemeat; it tasted like mincemeat; it was conveniently packaged; and the price ranged from high to low to meet the purchasing level of all markets. Everything seemed to be going along nicely. Producers and distributors thought that at last the mincemeat problem had been licked.

The joy was short-lived. It was not long before sales began to drop off and, with the 1930-32 collapse of business, dropped out of proportion to other food products.

Manufacturers began asking why and studying ways and means to bring back the excellent and profitable prewar sales of this national autumn and winter favorite pie filling. Conditions within the industry reached the stage that the deficiency of the product attracted the attention of the editor of a large city daily newspaper, who ended his editorial with "something ought to be done about it."

Upon analyzing the conditions in the industry from the consumer angle, Atmore & Son, Inc., the oldest mincemeat maker in the country, found that in preparing mincemeat for the modern can and jar the most important factor—flavor—had been slighted.

In flavor we probably have the most intangible and elusive component of all food products. It is a quality that cannot be definitely and positively determined. It is a quality that changes from day to day and in mincemeat, at least, improves with age for about six months and then usually begins to deteriorate.

Twenty Flavors Blended

Mincemeat flavor is a composite of the flavor of as many as eighteen to twenty ingredients, each with its own elusive individuality which may or may not change in quality when blended or merged with the flavor of other ingredients.

When mincemeat first became known commercially, it was truly a home-made product; usually made in the kitchen of the owner of the store whence it was sold to the neighborhood housewives. This was the status of mincemeat making when Robert Atmore opened his grocery store at 10th and Buttonwood Streets in Philadelphia in 1831. The flavor of his mincemeat became so popular that other grocers in Philadelphia wanted him to make mincemeat for them to sell. By 1842 he was convinced that such a move would be a profitable way to widen his market.

Home-size packages of mincemeat have always been packed by Atmore & Son, but until 1922 no attempt had been made to process or sterilize the contents of these packages to assure their keeping over a long or indefinite period of time. Such packages were sold with the definite understanding that their contents were semi-perishable. Following the World War there was such an insistent demand for mincemeat in medium-priced jars and cans that we started to experiment and finally hit upon a mincemeat that we could guarantee to keep under all reasonable conditions and which would still make an acceptable pie. We are still making that type mincemeat and packing it in 16- and 32-oz. glass jars for home use and in No. 10 tin cans for hotels and restaurants.

But bulk or "wet" mincemeat is our answer to the editor who wrote that "something should be done about it." Bulk or "wet" mincemeat is made in the old-fashioned way with fresh instead of dried apples and with fresh citrus fruits as well as with a definite knowledge that it is perishable just as any product containing fresh fruits, plenty of moisture and not too much sugar is perishable. But, because of the preservative effect of its alcohol and spice content, it falls more into the class of semi-perishable than into the highly perishable foods.

It consists of a wet mixture of finely chopped (not ground) juicy, firm-fleshed early-winter apples, finely ground pulp and peel of fresh oranges and lemons, whole Thompson seedless raisins and Patras currants, thinly sliced and diced citron, finely ground sweet suet and cooked lean beef, granulated sugar, salt, finely ground cinnamon, allspice, ginger, nutmeg and cloves, alcohol, either sherry wine, brandy, or rum, according to market preference, and added water.

The raisins from 50-lb. corrugated cartons and the currants from 20-lb. wooden cases are emptied into an American Machinery Corp. washer with a continuous stream of water, where they are washed free from adhering dirt and freed from excess moisture by centrifugal action of revolving paddles within the perforated cylinder of the washer, then dropped to an A. T. Ferrell & Co. shaker cleaner and subsequently delivered onto a rubber sorting belt from which remaining pieces of twigs, sticks and the like are manually removed. At the delivery end of this sorting is a powerful magnet which removes all pieces of iron, even though covered by the raisins and currants.

Citron quarters are first cut into clear, thin slices and subsequently diced in a J. P. Anderson & Co. vegetable cutter. Oranges and lemons are hand sorted and cleaned preliminary to being finely ground in a motor-driven Enterprise Manufacturing Co. grinder which is used also to grind the fresh suet and the cooked lean beef.

Apples at the rate of 30,000 lb. per 8-hour day are cored and peeled on eight pairs of F. B. Pease Co. semi-automatic machines, from which they are taken by a waterproofed canvas conveyor belt to a wash box containing a 2 per cent salt solution. Here the apples are washed free from any adhering material and protected

● Since 1831, Atmore & Son, Inc., has continued to make and sell bulk mincemeat in spite of the predominance with which packaged foods have been marketed during the past several years.

● The reason is an economic one, as this company has tried its wings in marketing mincemeat in consumer package form.

● Piquancy of flavor and aroma were missing in the processed packaged form and sales took a nose dive.

Above—Firm-fleshed, early winter apples, at least 2¼ in. in diameter, are cored and peeled at the rate of 30,000 lb. per 8-hour day. They are later sorted and trimmed by hand.

◆

Left—Raisin and currant washer in upper left corner is charged from floor above. Upper roll-like unit at end of sorting belt is a powerful magnet to remove tramp iron.

against darkening while waiting to be used. From the salt-solution wash the apples are transferred to a hand sorting and trimming table where all objectionable portions are removed, preliminary to placing in barrels for transfer to the weigh hopper over the specially designed and exclusively owned continuous cutter.

When a batch of mincemeat is started, the desired quantity of apples is weighed into the cutter which discharges directly into the horizontal 2,500-lb. capacity J. H. Day Co. mixer fitted with a double spiral motor-driven agitator.

Liquids Mixed Separately

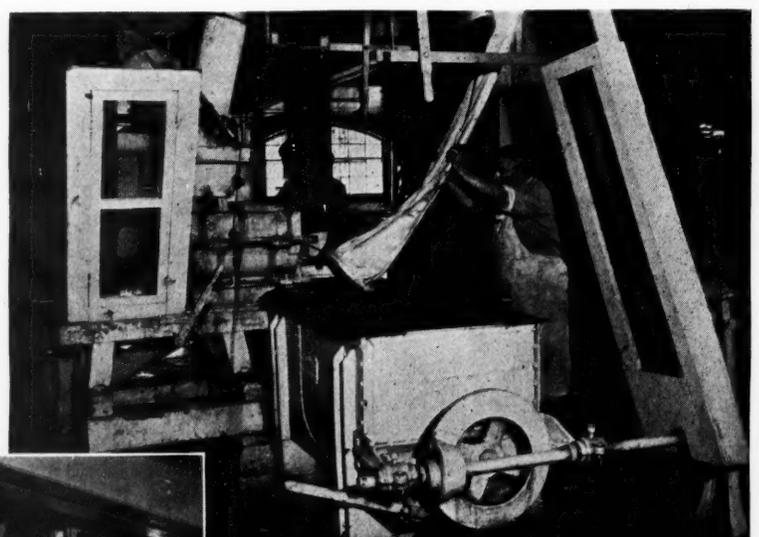
While the apples are being cut, the desired quantity of water, alcohol, and wine, brandy or rum is metered into a Day liquid mixer, also equipped with a motor-driven agitator, into which has been delivered by metal chute the required quantity of sugar, spice and salt. When a sufficient portion of the apples has been ground into the mixer to give a good mixing effect, the ground oranges, lemons, suet and meat are added and the contents of the liquid mixer are delivered to the mixer through a fine-meshed screen which removes any sizable solids that may be in the spice-sugar liquid mixture. In the meantime, apples continue to be cut into the mixer, and the raisins, currants and diced citron are delivered upon signal.

When all the ingredients are in the mixer and have been continuously agitated for approximately 25 minutes to assure uniformity of mix, the batch is run into a large hopper on the ceiling of the room below. From this hopper the mix flows to another cutter over a magnet which catches any nails, bolts or pieces of wire that may have gotten into the mixer. This second cutter makes certain that no lump of suet, meat, raisins or other ingredients go through to market container without being broken up.

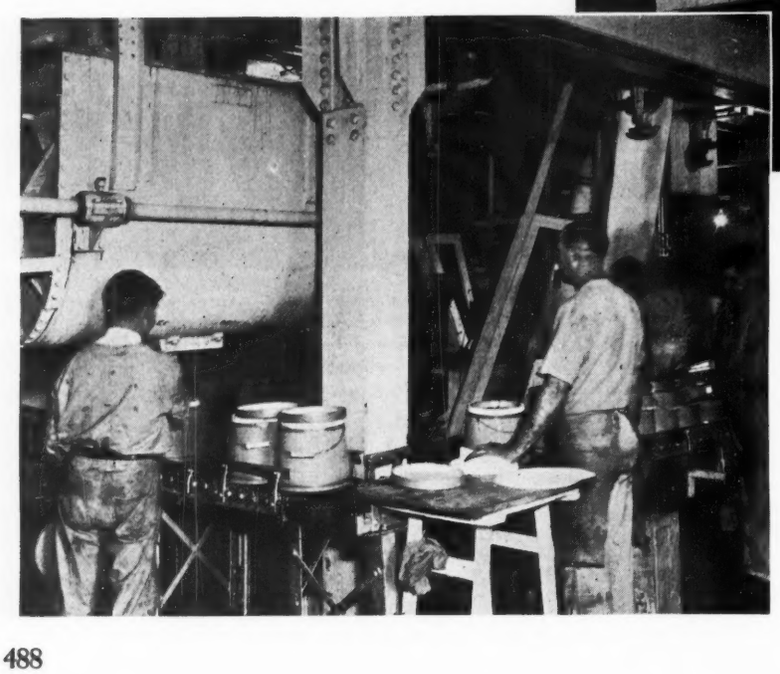
A slow-moving paddle-type of Taber rotary pump lifts the now finished mincemeat to the Day mixers suspended from the ceiling of the mixing and packing room. From these mixers the mincemeat is run directly into 500-lb. white oak barrels, 100-, 150-, and 300-lb. fir casks, or into 5-, 10-, 20-, 30-, and 40-lb. white-pine pails. All these containers are paraffin lined and, in the case of the pails, a circle of white vegetable parchment is placed on top of the mincemeat and a second and larger one is put over the top of the pail before a close-fitting wooden slip-cover is put on and fastened in place by four copper-wire staples.

Packed in this manner and properly identified by label according to alcohol flavor and percentage content, the bulk or "wet" mincemeat is ready for shipping storage, where it will gradually improve in flavor and aroma for six months.

Prepared and packed in this manner nothing is done to impair the blended natural flavors and aromas of the basic ingredients and the specific flavorings. It is also our answer to the why of bulk or "wet" mincemeat.



Right—Use of a canvas boot to deliver currants and raisins to mixer avoids clogging due to bridging.



Left—Portion of roller conveyor under filling mixer is removable so that discharge can be made direct also when casks or barrels are being filled.

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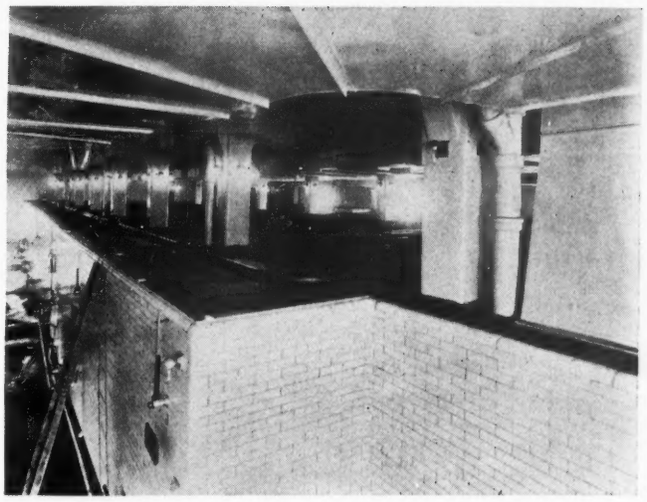
Beer Making

Not What It Used to Be*

By JOHN A. W. HARTUNG
Chief Chemist
Jacob Ruppert Brewery
New York, N. Y.



Glass-lined fermenting tanks at the Ruppert Brewery

SINCE the legalization of beer, in April, 1933, the brewmaster has been confronted with many difficult situations which, previous to the World War, were unknown. Malt itself, the chief raw material of beer, has been quite a problem. Because of the reduced demand for brewers' malt during the prohibition period and the consequent low price, the average Mid-Western farmer had become lax in the care he devoted to the cultivation of quality brewing barley. During 1933 and 1934, this condition had the effect of making a quality malt difficult to obtain—especially since increasing quantities of malt had to be provided.

Better care will be given in the future by the farmer, as well as by the agricultural station and others, to the raising of quality brewing barley. Wisconsin pedigree barley No. 38, now commonly used for brewing barley, will be investigated more fully for its brewing merits, and will be compared with the brewing results obtained from the use of the reliable and satisfactory Manchuria or Oderbrucker barley. Quick and warm growth of the green malt and speedy kilning have recently been blamed by some in the brewing industry for such deficient characteristics of beer as low aroma and poor foam-keeping quality.

Difficulties existing in 1933 in many American breweries with a regular supply of biologically pure bottom-fermentation yeast were overcome in most of the larger plants a short time after the legalization of beer by providing a pure culture apparatus or by arrangements with scientific stations.

One of the greatest obstacles in the beginning was the poor condition of the plants available to the brewmaster for the production of beer. In some cases antiquated and often dilapidated buildings, run-down machinery, and insufficient equipment made the task of brewing healthful and palatable beer quite difficult. Hidden infections in old brewery cellar buildings always were difficult to locate and eliminate. Often lack of capital dominated all decisions on plant improvements, which frequently had to be made quickly and sometimes without sufficient previous experience to warrant application in brewing. Sometimes lack of funds or false economy has caused the installation of insufficient refrigerating capacity, which, because of inability to maintain proper storage cellar temperatures during the summer months, has prevented the production of quality bottle beers. In many instances, lack of capital prevented provision for sufficient beer-storage-tank capacity and invited the sale of beer only partially matured. In other cases, equipment and piping which should have been constructed from copper or brass has been made from inexpensive iron or steel instead, with consequent greater maintenance costs, reduced life, and lowered dependability.

Steel Tanks Now Common

Since the return of legal beer, a great number of the new storage and fermenting cellar buildings have, for reason of low first cost, been provided with ordinary steel tanks instead of with the customary wooden vats and casks or enameled tanks. The inner surface of such plain steel tanks is coated with inert material, which is to prevent contact of the beer with the metal surface.

Generally speaking, there are two types of coatings for this purpose; one being a bituminous or shellacky substance which is dissolved in a suitable solvent such as alcohol, chloroform, carbon tetrachloride or related compounds. The other type of coating material has to be applied in molten condition. It is free from volatile solvents and usually is composed of a mixture of resinous, pitchy, waxy or paraffinic nature.

Steel tanks provided with these coatings have to be inspected for defects from time to time during their use, and at intervals new coating material has to be applied to either the exposed metal spots or to the entire tank surface. The instability of some of the coating materials commonly used for this purpose represents a danger not met with in modern glass-enameled steel storage tanks. Stainless steel and aluminum have been used quite extensively in Europe for beer-tank construction. In the United States these metals have found only very limited application for this purpose, but there have been a few installations of cement tank buildings for storing beer.

The general appearance of buildings and equipment of breweries built recently does not vary substantially from plants constructed twenty-five years ago except that the architectural trend of the day dominates to some degree. Scarcely any changes are noticeable in the details of construc-

(Turn to page 512)

*Condensed from the report of technical committee, Master Brewers' Association of America, presented Oct. 8, 1934, to 31st annual convention of the association at Waldorf-Astoria Hotel, New York City.

Beware of the Dog-Food Business

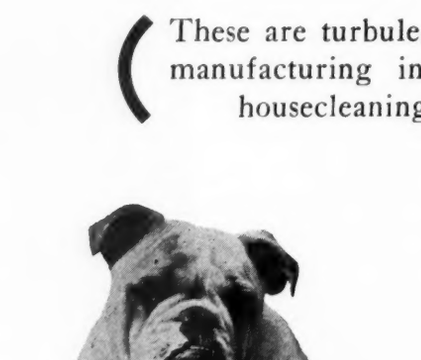
(These are turbulent days in the dog-food-manufacturing industry, what with the housecleaning that is now afoot.)

By M. C. SCHWARTZ

VIEWED through the rose-colored lenses of past profits and low initial investment, the dog-food-manufacturing business presents quite a come-hither aspect. And, of late, many food manufacturers have been asking themselves, and others, whether they ought not to enter this field and reap their share of the promised harvest.

But many of the purported statistics on the dog-food industry have been overdrawn and, besides, the industry is undergoing a face-lifting program that will change its features considerably. In the matter of statistics, statements were published, and are still appearing, that dollar volume of dog-food sales total from 100 millions to 130 millions of dollars annually. Actually, according to an estimate by National Dog Food Manufacturers' Association, based on returns from manufacturers since the code was approved on May 31, the total dollar volume in 1933 for more than 200 brands of canned and dry food was only about 40 million dollars. Of this total, canned-food sales are estimated at 25 million dollars, split up among 125 manufacturers and distributors, and dry food sales at 15 million dollars, divided among 100 manufacturers and distributors.

About as much liberty has been taken with potential market figures as with sales volume. If sales were proportionate to the extremely optimistic figure representing potential volume, then 100 million dollars would be an underestimate of sales volume. But, with outlets fully investigated by experienced sales promotion men, it appears that only one-fourth of the potential market was reached in 1933. Putting "consumer" population at eleven million dogs (the total number which would be likely to be fed on prepared rations), the annual consumption of canned and dried dog foods could have been about 3,640,000,000 lb. last year. In reality, the total consumption is estimated to have been only something more than 850 million pounds. Since the "consumer" population has not increased rapidly; since the high-powered sales-promotion plans within the industry have produced more business for some firms and correspondingly less for others, without producing more for the industry; and since the fight for business has been most keen, it might be said that the market has been saturated, at least with the mine-run of products manufactured and merchandised.



Acme photo

Profit figures issued, although inflated, have proved on investigation to be less inaccurate than figures for dollar volume and potential market sales. There is no denying that the prepared dog food industry has been a profitable business. However, the fact that the industry has held out so much promise of profit is one of the reasons why it fell into the unfortunate state that existed prior to approval of the code. The profit motive, admitted to be the greatest driving force in American economic life, drew more than 200 firms into the industry, for it seemed that almost anybody could wade in and take a profit, provided he could put up the necessary capital. That *was* how matters stood. Profit was the thing of primary importance; how it was made, of secondary consideration. Since May 31, when the code was approved, that trend of thought has, by necessity, been reversed.

Although it is not the purpose of this article to exonerate the dry-food manufacturers and condemn the canned-food group, most sources of information indicate that the former group is a target for fewer stones than the latter. The reason for the more favorable condition in the dry-food industry is its age. Beginning in England in 1894, and in this country ten years later, the dry-food manufacturing industry grew slowly, stabilizing itself and acquiring respectability as it grew. The number of manufacturers in the industry was small enough to prevent malpractices arising out of overproduction, yet large enough to supply a slowly expanding market. Competition was keen, but fair. Furthermore, while the canners were engaged in internecine warfare for the retail market in the past ten years, much of the dry-food volume was represented by bulk sales. Thus, the dry-food industry has been less subject to the vicissitudes of retail merchandising and to the necessity of catering to the retail market.

In contrast to this picture, the canned dog-food industry has sprung up like a mushroom. Starting about ten years ago, it at first attracted comparatively little attention, but when certain foresighted individuals discovered what looked like a good thing, they lost no time in seizing the opportunity to make a profit in this new field. The same idea seems to have occurred to many enterprisers at about the same time, for the economic map of the country was soon dotted with canneries from coast to coast.

As was natural in an industry in which no one had any considerable

experience, all sorts of ingredients were put into the can. Moreover, the attention of the processor was centered on low-cost rather than high-nutrient formulas, which accounted for the large quantities of water and bulky material that went into the pack. And from this situation was born the germ which was later to threaten the life of the entire industry.

The housewife, her knowledge of the convenience of packaged foods constantly increasing, turned naturally to prepared dog foods. Not only were they easy to get but in the long run as cheap as any other provision for the dog.

Business boomed. Manufacturers and distributors rushed in like Forty-Niners to get shares in this "natural" business. Widespread throat cutting began. Price cutting, underselling, free deals, libelous advertising and slanderous gossip—all the malpractices engendered by cut-throat competition—were employed. As one member of the industry described conditions, "the whole industry was chaotic and was headed straight for ruin."

With approval of the code of fair competition for the dog-food industry on May 31, notice might be said to have been served that the trend of thought was due for a shift in the opposite direction. In effect, the code offers the industry the chance to save itself. This document provides, for one thing, for standards of quality based on biological values and also for labeling requirements.

And now, both the Code Authority and the manufacturers' association are busily engaged in trying to rid the industry of its hangover of unfair practices.

The attention of the Code Authority has been directed to labeling because of the prevalence of two evils: (1) the disparagement of competitors' products through the use of negative statements or disclaimers; and (2) the use of misleading statements tending to deceive the purchaser and leading directly to human consumption of canned dog food. Statements under the former heading, such as "Contains no horse meat" or "Horse meat is best for the dog," have now been ruled out, as have such misleading statements as "Fit for human consumption," which come under the second heading.

The code states that "reasonable definitions and reasonable standards of identity and biological value for canned dog food, necessary to prevent deception, fraud and unfair competition in the sale of canned dog food," shall be established. It is probable that grades will not be expressed in letters or numerals but in qualified statements on the label and in advertising copy; for example, "Complete for maintenance in health of adult dog," or "Complete for the growth of puppies." Such a system of grading, it is believed, would establish all brands on their proper level of quality, thereby eliminating the competition of a high-grade dog food with a lower grade one and the competition of one food meant for a definite purpose with another food meant for a different purpose.

To the matter of product control both the Code Authority and the association have directed attention, pointing out that for their own welfare manufacturers should know whether the quality of their product is at least as high as the formulas allow it to be. This counsel might be considered as a prelude to the requirement of control laboratories when standards and definitions are established later on. According to one authority, the total number of control laboratories in the entire industry, including canned- and dry-food plants, is at present not more than twelve.

Following the lead of other industries which are attempting to make advertising of advantage to the industry, rather than solely to the individual advertiser, the Code Authority and the association are not only using the code to stop inaccurate advertising but are conducting a vigorous campaign to promote the use of clean copy satisfactory to both manufacturers and purchasers of dog food.

The beginnings of a clean-up in dog-food advertising copy have also been made by certain advertising mediums.

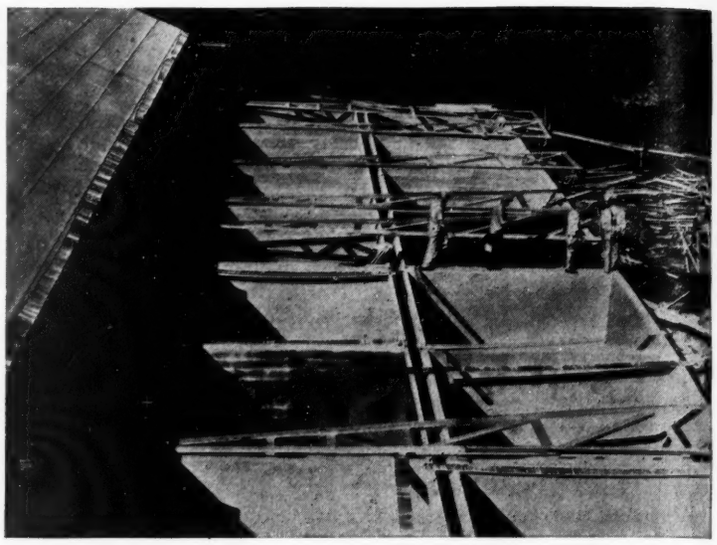
It is evident that the business philosophy of the entire industry must change decidedly. In the future, the idea will be to make only as much profit as is justified by the product and the method of doing business.

Less than a year ago an enterprising individual could have set himself up in the canning business with an investment of about $5,000. On that investment, it is estimated, he could have grossed in the neighborhood of $300,000, and netted as much as 20 per cent. But, with increased expenses under the code and with corrective details of the reform program about to begin, last year's figures are worthless as a basis for predicting this and next year's returns. Bluntly enough, some manufacturers are saying, *"This is no time to come into the business."*

Most of the firms frankly admit that they are not at all sure what is going to happen when standards are set and rigidly implied; when the strong arm of the Code Authority falls with impunity on those who are judged guilty of unfair competition; when the inevitable mergers begin to absorb the small-fry, and "big business" begins to get "tough" with the firms not "in on" the mergers. Even the older heads see the industry for a time, at least, as a stormy sea. So, for the newcomer, it is better to be an opportunist, to wait until the storm passes.

Four leaders in dog-food sales. Note differences in wording of labels.

First battery of sixteen 1,200-gal. concrete fermenting tanks during construction. A year's service showed them to be so successful that sixteen more tanks were built in 1934.



Adopts *Concrete Fermentation Tanks* To Get Better Sanitation

Cost 300 Per Cent More Than Wood—But Roma Winery Says It Pays

WHETHER the concrete tank is a suitable or practical piece of equipment for fermentation has long been a matter for discussion and controversy among wine makers. It is not an innovation, for the concrete tank has been in use for more than 60 years. Despite its high initial cost, as compared with wooden tanks, its rate of actual depreciation is very low, and in Germany it has been reported to be as low as 0.1 per cent per year.

Roma Wine Co., of Lodi, Calif., is so well satisfied with concrete tanks that it is doubling its installation. A year ago, a battery of sixteen concrete tanks was constructed, and today a second battery of slightly different design has been completed, giving a total fermenting capacity of 32 such tanks. All wooden fermentation tanks are to be eliminated, although storage tanks are not to be changed.

Of the practical advantages of concrete over wood, the sanitary features as well as space economy are the more important. For example, although the Lodi installation involved an original cost of about 300 per cent more than an equivalent capacity made from redwood, the company is satisfied with the "100 per cent sanitation" that is facilitated by the hard, impervious surfaces of concrete.

Elimination of both the difficulty of keeping the tank clean and suppressing the development of acetic acid or other deleterious bacteria contributes so much to the improvement of the wine produced in concrete tanks that the Roma Wine Co. regards the increased cost as an investment in better quality. Here, as in the manufacture of many other foods such as beer, butter, milk and meat, the incentive for perfect sanitation is found in economic rather than esthetic reasons.

Wooden tanks in wineries can easily become infected with vinegar bacteria just as wooden syrup tanks in canning plants have become infected with troublesome thermophilic bacteria. Microbial growth in wine constitutes what is known as a "wine disease" and usually results in considerable economic loss to the concern or the industry. In mild attacks, the result may be a wine that has a rather too large content of acetic acid, but in extreme cases the result may be a wine that is too sour, or hopelessly cloudy and, if all the wine is thus afflicted it may bring financial ruin to the business.

Concrete tanks can be built to any ordinary shape—usually in batteries of rectangular tanks to conserve space and material. Large wooden tanks, on the other hand, must always be made cylindrical, so that the staves may be drawn tight by the tank hoops. Rectangular tanks in a block permit a theoretical saving of floor space of 31 per cent.

The attitude of many vintners and other food manufacturers toward unlined concrete fermentation tanks has been based on objection to the porosity of some forms of concrete, but particularly on the chemical problems arising from the chemical interaction of constituents of wine and concrete leading to disintergration, contamination and leakage. Corrosion of concrete by organic acids in foods is well known in many food plants. Bare concrete floors in dairies always are badly pitted, and likewise in many canning plants concrete does not hold up well. At Coldwater, Mich., is a sauerkraut plant equipped with concrete fermentation tanks that, according to the latest information, have

been badly corroded by the kraut brine, despite their yearly coating with paraffin, and have not been used for the last four years for that reason.

In wine fermenting, the corrosion of unprotected concrete by acids in the wine gives troubles which arise chiefly from the solution of calcium salts. These later precipitate as insoluble compounds and cloud the wine. The Roma Wine Co. solves this problem by utilizing a method of treating the tanks which is well known in Europe. The treatment is not to be confused with the special glass or heavy composition lining for tanks which has been developed in Italy and Switzerland. Interior surfaces of the concrete are washed with a solution of tartaric acid and, at the same time, scrubbed vigorously with a stiff reed brush. Then they are allowed to dry thoroughly, after which they are washed with fresh well water, and allowed to dry again. All of these operations are repeated a second time in exactly the same manner before the tanks are used for fermentation.

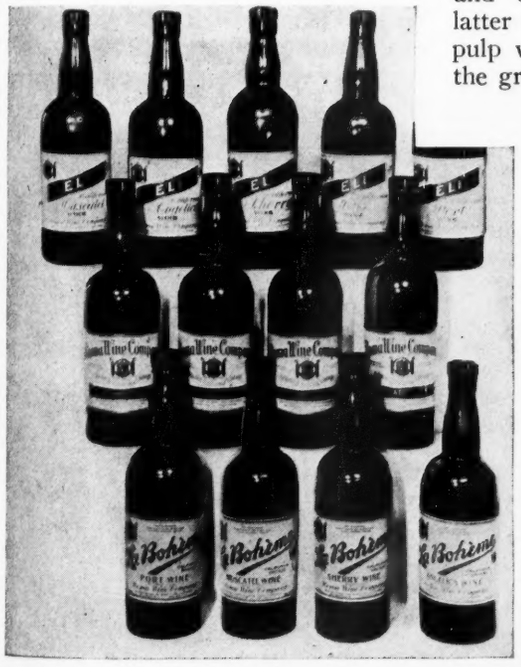
If this is done, according to B. B. Turner, of the Roma winery, there is positively no danger of calcium precipitation in the wine that has been fermented in these tanks. The results of 1933 operations have warranted a further expansion of concrete fermenting capacity. The washing with tartaric acid is repeated at the beginning of each season.

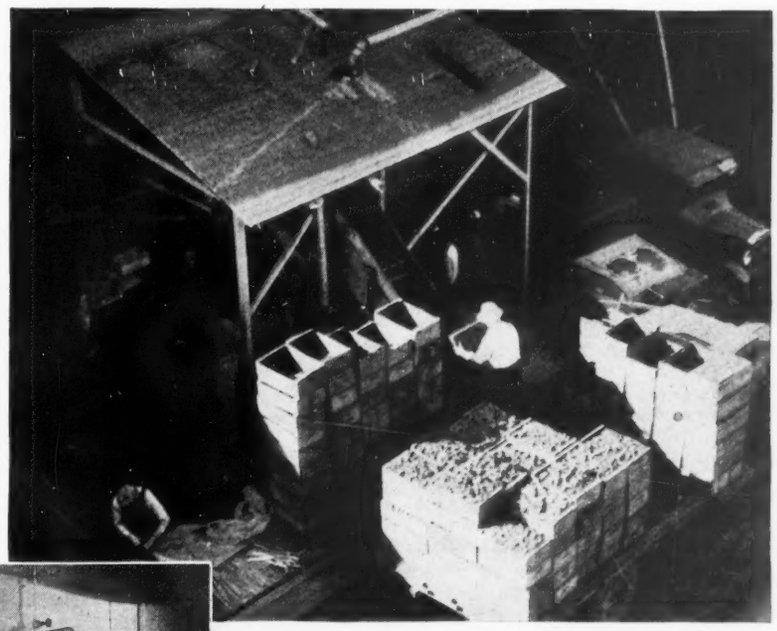
Aging of the wine is done in large wooden tanks in the manner usual in the wine industry. Before this stage is reached, the juice of the grape goes through a series of operations which are necessary in the production of good wine. The grapes are crushed as soon after picking as they can be trucked to the winery. This is done in mechanical crushers—in contrast to certain less esthetic old-world practices—at the rate of 1,200 tons per 24 hours. During the busy season—from Sept. 1 to Jan. 1—the winery works on a 24-hour day. Two grape crushers are needed for this job. They not only crush the grapes but remove and discharge the stems. If the latter are allowed to remain in the pulp with the skins and seeds after the grapes are crushed, the flavor of the wine is impaired. If the stems are ground they make good cattle feed. The entire mass discharged from the crusher is pumped to the concrete fermenting tanks.

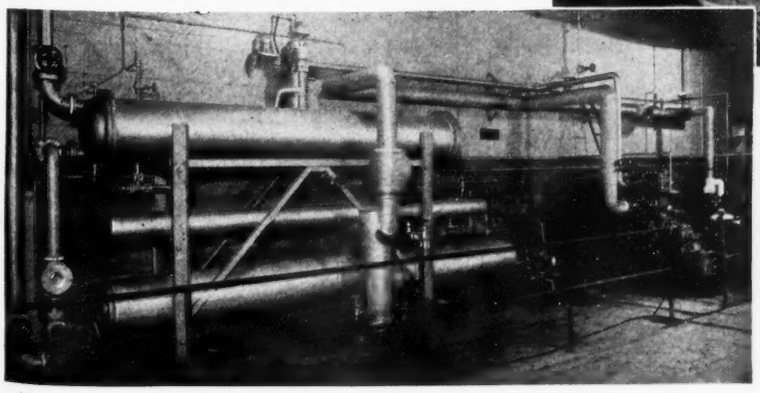
Certain improvements have been made in the newest fermenting tanks, which account for their construction in batteries of eight instead of sixteen, as was done with the first installation. Under each new battery there is an air space connected by ducts to a refrigeration unit. Cold air is blown through this space at all times during fermentation, thus helping to insure a cool fermentation, which is so important in the production of quality wines. Cooling coils are, of course, installed in each tank. By having the tanks in two batteries, the temperature control is facilitated.

At the proper time, the juice is drawn off from the bottom of the tank trough a strainer in the form of a large wire basket which retains the pomace. The juice goes into other fermenting tanks. Fermentation is a relatively short process and tanks in this service are in use only a few weeks in the year.

A certain quantity of juice remains in the pomace which is salvaged in







Above—Dumping boxes of grapes into the conveyor leading to the crusher. The pulp is pumped to the fermenting tanks. Stems fall into a wheelbarrow in the pit.

Upper Left—Five of the products of the Roma winery with their new tamper-proof seal made by Anchor Cap & Closure.

Left—New wine en route to storage tanks can be cooled to any desired temperature at the rate of 2,400 gal. per hour by this Gay Engineering Corp. unit.

the following manner: The pomace is washed with 50 gal. of water to the ton and then pressed. The expelled liquid, consisting of pressed juice diluted with water, goes to the distillery, where it is fermented and converted into brandy (at wineries where no distillery is operated, the liquid usually goes into the fermenting tanks with the wine).

When making red wine, the pomace is allowed to remain in the juice until the wine is fermented. In making white wine, however, the juice is drawn off before fermentation takes place. The exact length of time in which the juice remains with the pomace varies with the kind of wine being made. Sooner or later however, the pomace goes through the press and the salvaged juice goes to the distillery. Pressed pomace is discharged onto a conveyor which takes it to the pomace dump.

Tanks in the storage cellars range from 3,500 to 5,000 gal. capacity, with a few holding between 5,900 and 52,000 gal. Some wines which require definite low temperatures are stored under refrigeration in large rooms measuring 70 x 100 ft.

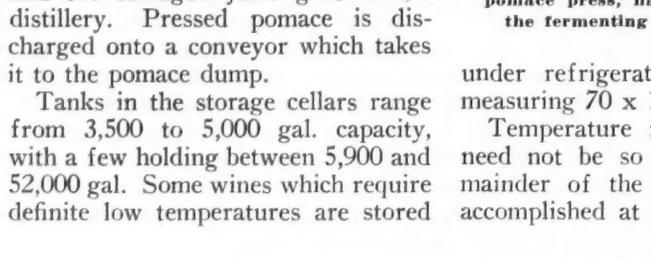
John Lunardi, who stands before the pomace press, has been in charge of the fermenting room for 37 years.

Temperature regulation, where it need not be so precise for the remainder of the wine in storage is accomplished at Lodi by a combination of building construction and regulation of ventilation. This cellar occupies about an acre of ground. Its walls are 17 in. thick and the roof is insulated with 2 in. of Celotex. At night, louvers in the roof and doorways, protected by iron grilles, are opened to let in the cool air, and in the morning they are again closed to keep out the warm air.

Newly fermented wine going into storage is pumped through the newly installed cooling plant (see page 493) made by the Gay Engineering Corp., of Los Angeles. This unit will cool 2,500 gal. of wine per hour to any desired temperature from 35 down to 10 deg. F.

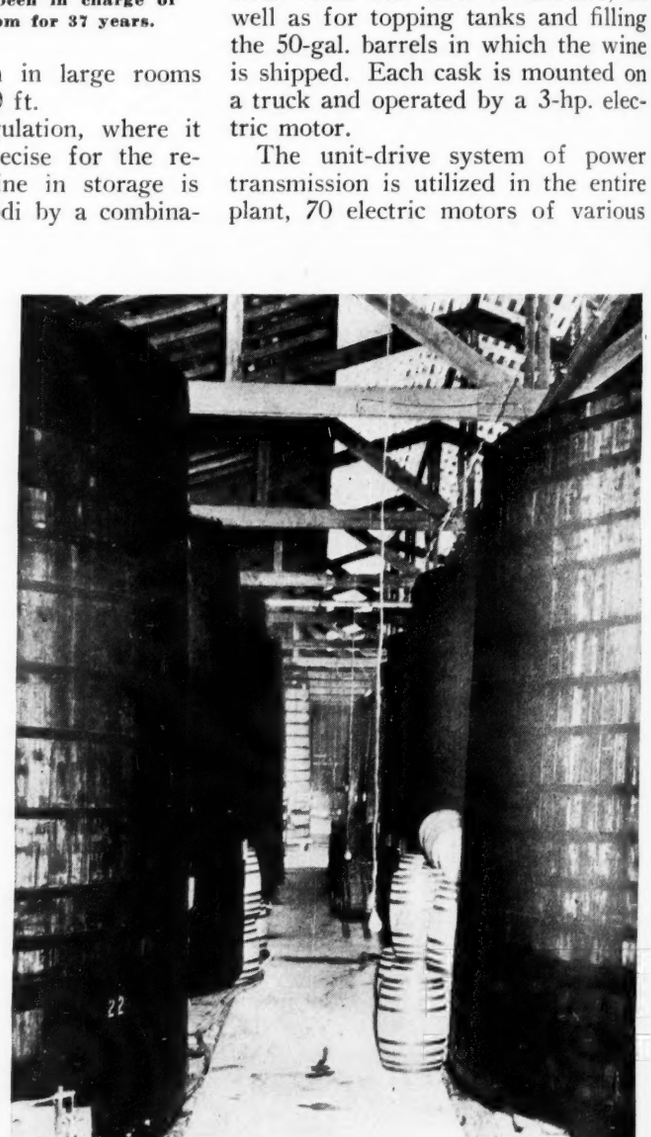
Portable electric pumps are used for racking, which is transferring wine from one cask to another, as well as for topping tanks and filling the 50-gal. barrels in which the wine is shipped. Each cask is mounted on a truck and operated by a 3-hp. electric motor.

The unit-drive system of power transmission is utilized in the entire plant, 70 electric motors of various

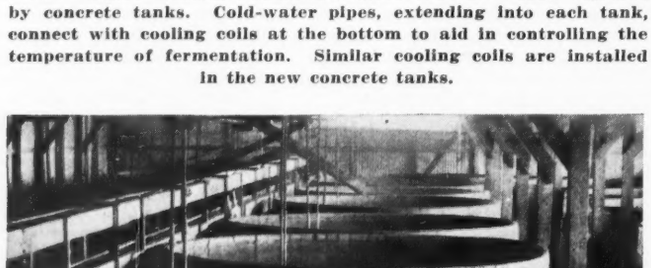


Above—This plate and frame filter press, made by T. Shriver Co., is used for filtering the wines. Artificial cooling plus the use of the filter press reduces clarification losses.

Right—Note the concrete alley between the storage tanks and, in the lower corner, one of the portable electric pumps in constant use at this plant.



Below—These wooden fermenting tanks are now being replaced by concrete tanks. Cold-water pipes, extending into each tank, connect with cooling coils at the bottom to aid in controlling the temperature of fermentation. Similar cooling coils are installed in the new concrete tanks.



sizes being in use. Over 10,000 ft. of rubber hose is used in handling the liquids.

Filling the barrels in which the wine is shipped involves two men working together. A single hose leads from a motor-driven pump to a Y fitting. Each branch of the Y has a short length of hose fitted with a nozzle suitable for barrel filling. A three-wire cable is strung along with the hose to remote-control switches in the hands of each operator. Moving along a row of barrels with their bungs up, one man nearly fills the barrel, while the other follows along and finishes the job. Either one can control the operation of the pump by the switch in his hand. When filling the barrel, the operator continually taps the barrel with a hammer, and listens to the sound to determine how full it is. Two men operating with this equipment fill and close approximately four hundred 50-gal. barrels per day.

A well-developed sense of smell is necessary for the men who clean the barrels before filling. This is a necessity because the amount of visual inspection through the bunghole is very limited. A good workman can take one sniff, and thereby determine the strength of the solution necessary to clean it, as well as ascertain the kind of wine which had previously been in the barrel and even the approximate length of time in which the barrel has been empty.

Cleaned barrels are sterilized with a burning sulphur stick. Small wineries usually purchase the sulphur sticks, but the large wineries make their own. These sticks are made of burlap, a strip of which is wrapped or twisted to resemble a stick, and then immersed in melted sulphur. When it is cold it is very stiff. One end is ignited and thrust into the barrel through the bunghole. The sulphur dioxide thus formed sterilizes the interior of the barrel. After a short interval, the stick is removed and put into the next barrel. Sterile barrels are bunged until ready to be filled.

For filling, 40 barrels are lined up in a row with their bungs up. The bunger precedes the fillers and wields the familiar bung starter, to unbung the barrels. The filling crew replaces the bungs and the shipping crew removes the filled barrels and lines up other empty barrels in their place.

When wine is to be bottled at this plant, it goes through a final filtering and polishing of the character required for its particular type. Two Shriver wine filters are used in this department.

For bottling Chianti, in the traditional globe-shaped containers, a 6-row filler of foreign manufacture is used; for other kinds of wine, an electrically controlled vacuum filler made by U. S. Bottlers' Machinery Co.

Particular care must be used in the bottling of Chianti. The bottles are first washed with water and drained, then rinsed with wine and drained. Only then are they filled. Bottled Chianti is corked with an Ermold corking machine, and another machine of the same make affixes the tinfoil wrapper over the stopper. On all bottled wine other than Chianti, a new tamperproof seal, designed by Anchor Cap & Closure Co., is used. The feature of this cap is a Bakelite ring, or sealing band, inside, which cannot be removed without breaking the seal.

Wine for bottling is sterilized by filtration through a germ-proof filter from which it flows into holding tanks and thence by gravity to the filling machine. Before bottling the wine, it must be allowed to rest for three or four weeks, which requires storage in ten 500-gal. glass-lined tanks.

Sources of Variation In Garlic Flavor

By JOHN B. ROLLE

Vegetable Juices, Inc., Chicago, Ill.

ALTHOUGH the term garlic involves two meanings—one denoting a flavor, the other a bulbous vegetable—there is a tendency for many users to forget that the flavor comes from the vegetable. Hence, when the natural form of garlic is used, the flavor is likely to vary considerably. Of reasons for this, there are plenty.

Garlic from California differs from that harvested in Mexico or other localities for reasons that are ascribed to differences of soil and climate. Furthermore, there are several varieties of garlic—white, pink and yellow—and each one has its peculiarities when used in flavoring foods.

A further problem is introduced into the use of garlic when it is important to maintain a constant flavor, by the fact that a single lot of garlic will produce somewhat different results in different seasons of the year. Freshly harvested garlic has a much higher moisture content than it will have six months later, in December, after it has dried out considerably.

To maintain a constant garlic flavor, where the raw garlic is used, requires constant testing of the flavor in the control laboratory in order to be certain of final results. And unless this is done there will arise many a "headache."

Fresh garlic, right from the soil, is juicy and solid. Six months later it is dry, and about 20 per cent of its original weight is lost because of evaporation of water and spoilage of outer cloves that were bruised during harvesting. From the latter, not only water but flavor has evaporated, and frequently the bruised cloves mold and rot. Sometimes they fall from the pod.

About April the California garlic starts to sprout and spoilage takes place rapidly. Mexican garlic behaves similarly, starting to sprout about December. Since frequently more than 40 per cent of the cloves are dried, rotten or sprouting at such times, users must be extremely careful to sort out only the good cloves. Sprouted cloves should always be discarded because a large percentage of their flavoring value is gone.

Bruised cloves often mold. If used in a food product they introduce an undesirable flavor. And, furthermore, their garlic flavor is gone. The only safe and sure way to use garlic, therefore, is to peel each clove and discard the dried or rotten ones. Otherwise, there may be flavors in the food product that later cannot be accounted for in any way.

Another way to use the garlic flavor in a manner which avoids these problems is to obtain it in the form of a liquid or juice that has a standardized flavor, so that, irrespective of the season of the year, there is no variation of its content of volatile oils and flavoring power.

The Dumb Housewife Looks

... and Speaks Out Her Mind to the Canners

IF CANNED FOODS are to be regimented along with other things, for the sake of our dumbness and our tempers, will the canners and Washington please get together and consider our needs and our convenience in their planning? It is true that the majority of us are rather vague—possibly irritatingly inconsistent—as to what we want, or think we want. Probably if you should ask us what information should go on labels, we would, as one woman, be tempted to reply: "That is your job—find out, and put it on."

We have for so long been on the receiving end for propaganda by printed word or word of mouth that it has become a habit to expect it. Seldom, indeed, does it occur to us that we should be showering you with complaints, with suggestions, with demands for what we want. Even to the local grocery man we make few suggestions (although we may complain). We realize he is too far from, and too indirectly connected with, the manufacturer. Right here is the weakness in our relations —lack of actual contact between manufacturer and consumer.

But how you would be tearing your hair to meet our suggestions and demands if they reached your ears! Because, of course, we want so many different things.

There is the woman with the artistic temperament who wants labels to harmonize with her kitchen color scheme. As to what is on the labels, "Why, I never read the things," was her surprised comment.

At the opposite pole is the practical mother of a family, whose immediate response was, "Why, I think the most important thing is that the contents should be clean and wholesome." Thinking the matter over further, she decided she wanted to know how the raw product had been handled and processed so that flavor, vitamins and food value had been retained.

Now right here is where we are sympathetic with the attitude in Washington. We, too, are doubtful of your sincerity.

It would be more courteous to accept your publicized attitude of honesty and good intentions, but that would be misrepresenting many of my dumb, narrow-minded, suspicious fellow-consumers. We can't quite believe it, what with things we hear about glucose, sulphur for bleaching, acid treatments, and such things—to say nothing of the late Dr. Wiley, Alfred McCann and the "100,000,000 Guinea Pigs." Unworthy suspicions that we may be feeding our families strange chemicals in the place of honest-to-goodness food keep coming into our minds.

Take that fundamental and disagreeable subject of cleanliness. There is no use dismissing it with the statement that the old unsanitary days are over and every cannery —well, every large, advertised cannery—is as clean as or cleaner than our own kitchens. We are not all convinced. There was, for example, the maid in my kitchen this summer who had worked in a cannery and would eat nothing out of a can and gave a reason or two why. It is up to the manufacturers to bring up the standards of all canneries, or evolve a label which will assure us that we are buying only from clean factories.

Extra pennies willingly paid for food under Beech-Nut labels prove that by encouraging the general public to inspect its plants, this concern has removed doubt as to *its* sanitary methods and also that such doubts do exist. Of course, printing a claim for cleanliness on your labels is of little value. Establishing faith in your trademark, your name, seems the only way to convince us—unless you can, by some magic, enforce standards in every establishment.

But how you do it is, again, your job.

After cleanliness comes nutrition—vitamins, minerals, enzymes. We may harbor doubts about the importance of vitamins—they were the first noticeable example of the utilization of the alphabet which seemed to keep right on growing from A to Z, as the scientists discovered new varieties which needed names. It is only human to grow weary and a bit skeptical of too much repetition; but so long as the evidence seems strongest on their side, we want them. A rather unusual slant is that of the man who said he didn't care about vitamins in food because he could get all he wanted medicinally. I believe the majority of us have an inherent belief in nature's ability to feed us properly and want food as nearly as possible as it comes from the earth, with as little human tampering as possible.

In this we may be old-fashioned and prejudiced, and much could be done toward our education if the manufacturers would employ some disinterested research laboratory to investigate such matters. Then, if you will process your foods in accordance with their findings, and tell us so, we may believe you and buy food under your labels with contented minds. After all, what we want on the label depends on what we want inside the can.

If we are buying food for our most ambitious parties, appearance and flavor come first, with price a secondary consideration. A picture might suggest appearance if not altogether prove it—anyway, we are all, young and old, attracted by pictures. If we know your brand, your assurance of quality will satisfy us.

Most convenient, where half or whole fruit is to be used for salads or desserts, is information as to the number of pieces in the can—pears, peaches or other fruits. Accurate indication of size would be helpful.

If some women, relatively able to spend, want fancy products for parties, many more, these days, must buy the cheapest food possible, with real concern for nutrition, and secondary consideration for flavor, and least of all for appearance. For them your label should indicate real food value and wholesomeness, actual quality, value received for money expended.

at the Labels

Women buy most of the canned foods, so who is better fitted to say what should be said about labels?

One unusually methodical family each season buys one can each of several brands, judges them by taste, of course, but also pours off the liquid and weighs the solid contents, and so decides the brand they will purchase throughout the year. The size of peas, of beets, of fruits, is of no account to them; color, except as it may indicate actual quality, is of little moment; food value and flavor is the test. Can you devise a label —or a method of grading—which will tell this family what they want to know without the necessity of sampling and tasting? Weight of solids could be given, but as to flavor —whose taste will decide, whose judgment will set flavor standards?

Another thing about quantity markings: Many of us would prefer bulk measurements rather than weight or, failing that, a sensible standardization of can sizes and shapes. Put yourself in the housewife's place as she buys soup, fruit juice, any liquid, by weight—and in cans of such different sizes and shapes that if she does learn by experience how many portions are in one can, she has it all to learn over again if she buys a different brand in a different size, or shape, of can. Look at them on the grocery shelf—fat, squat cans; tall, thin cans; square cans, rectangular cans, bottles of every shape and size; and the only indication of quantity is the weight in small print where it will blend with the label and be least conspicuous.

What woman outside of a diet kitchen knows how many ounces of this or that make a portion? Women judge portions all their lives by eye, or by the old familiar teacup, pint or quart of liquid measure. We buy milk and cream by the pint or quart; we do home canning in pint and quart cans—but did a commercial canner ever put up exactly a pint, or a quart, or a gallon can of anything?

Let us consider the woman who does not usually feed her family out of cans, but so far as possible uses fresh vegetables and fruits—the woman whose conversion to canned foods would increase your sales most, because the others are your customers anyway and you only compete among each other for her business. She picks up a can on her way home from shopping, bridge or movies. She wants to know how large a can to buy, therefore she wants quantity in plain, familiar figures. She probably wants the best she can buy, except a fancy product at a fancy price; therefore she wants something to judge quality by—that is, flavor, appearance and food value. As she is familiar with a few brands on account of their widely distributed advertising, she probably will buy one of these unless influenced by the sales clerk or, in a chain store, has sufficient faith in its standards to buy an unknown product under the chain-store label.

Whether or not all canned products can be divided definitely into grades so that the housewife can buy the grade she wants, or can afford to buy, without reference to trademark or other information on the label, is a question the canners themselves are best able to answer.

We want flavor, wholesomeness and food value. What has size to do with these as compared to variety, locality in which grown, care and science given to culture, as well as weather and climatic conditions? Texture is, to a certain extent, dependent on handling, but also on ripeness and variety; the same applies to color, unless it is artificial; while flavor is the sum of these. What individual, or group of individuals, is to be the judge of flavor?

Just how should a product on the borderline between A and B be classified? If the best available corn this year should be the second quality of last year, what will be its classification? Will we have no A quality? Some of us consider "French" peas best; others scorn them as flavorless screenings. Do we, all over the United States, have identical tastes; do we prefer fruit grown in our own locality, or in some distant locality? The contention between Eastern and Pacific Coast apple lovers proves our differing preferences.

Last winter, under an unadvertised label, I purchased New York State pears and peaches, which received the enthusiastic approval of my family. They were in taste and appearance very like those "Mother used to can"—though more regular. Under any probable federal grading system these pears and peaches would rate about as follows:

Size—D; they were, of course, small in comparison with the California fruits.

Color—Possibly C.

Texture—D, because they were "fuzzy," like home-canned fruit.

Flavor—A+ to us. A professional taster would have to find a new letter for it.

In brief, my "find," which the family raved about, just wouldn't rate at all according to probable federal standards. Of course, appreciation of flavor is an individual matter—unless our tastes are to be standardized.

One more point, a matter of psychology. Depressed we may be and, making a game of necessity, we may boast of clever buying; but do we want to go into a grocery store, among our friends and neighbors, and baldly ask for the lowest grade? Or, if we are the undepressed exception in our neighborhood, we may dislike equally asking for the best. Silly, perhaps, but I believe we prefer to buy low-priced food disguised under a trade name, rather than flaunting its mean state in capitals or numbers.

Whatever you do, though, don't "kid" us; that's what makes us suspicious and inclined to back up the Washington measures.

Demonstrating

YOUR FOOD PRODUCT

In Store Windows

By ERNEST A. DENCH
Hohokus, N. J.

IN New York City, white women demonstrators are at a premium. The cosmopolitan crowds, who seem to have ample spare time and are mainly of the masculine gender, give the demonstrator such penetrating stares that a woman finds it a terrific strain. The least semblance of a smile or a personal touch, and the men idlers take it for a flirting cue. That's why it is difficult to get white girls for the work who can endure the silent grilling and the "glad-eye" grimaces to which they are subjected.

What makes it doubly harder for the stores putting on these demonstrations is that they generally are on behalf of household labor-saving devices or food products, with the selling appeal aimed at women. Yet the men hopelessly outnumber the women, who stay away because so many of the males obviously are of the loafer type.

This explains why many big city stores place their reliance on the colored girl as a demonstrator. The color line checks men attempting any overtures from the other side of the plate glass, while the colored girl can conduct the demonstration in an expert, serious manner without being ruffled or contracting stage fright. One store, for instance, with a day-bed novelty, has employed a colored window demonstrator for several years, and she performs her duties in a very efficient manner.

A Technique in Demonstration

The situation is different, of course, in other cities, particularly the smaller ones, but there is a technique to window demonstrations which may not readily be apparent.

Suppose you, as a food manufacturer, decide to stage a demonstration in a prominent downtown food-market window. How are you going to demonstrate? You might advantageously concentrate on the distinctive desserts possible with your product. For this a kitchen setting is advisable, with the necessary white porcelain table, kitchen cabinet, gas stove, refrigerator and sink, borrowed from a local furnishing house in return for the customary showcard courtesy. Your demonstrator is an attractive young woman. By "young" we do not mean in her teens; she will appear more capable if she is in her thirties or early forties, yet still physically attractive to spectators. Clad in a gingham apron over her dress, she will look the part of a typically progressive American housewife. As she prepares each dessert, she can place a card on the easel, giving directions for the same; indicating, too, that the food retailer, through the courtesy of the manufacturer, invites women to step inside for a free copy of the recipe folder or booklet.

Know Your Public

"Know your public" may be a piece of advice with "whiskers on it," so ancient is the war cry, but it always bears repetition where a new—to the food manufacturer—form of selling is indulged in. The average demonstration, such as just described, will go over strongly in middle-class neighborhoods, and downtown ones where a cosmopolitan population is tapped. But in the exclusive Shaker Heights section of Cleveland, Ohio, or Park Avenue, New York City—to give two examples—it would prove a fizzle. The big-moneyed people who live on these select throughfares place the domestic machinery in the hands of servants, and the "lady of the house," the pet expression of the bellringer, does not soil her lily white hands with the preparation of foodstuffs. A smartly uniformed maid would prove the ideal demonstrator in such localities.

To run to the other extreme, the case of a large retailer in a mill city may be cited. The *faux pas* in question was in utilizing a *chic* French maid as a "show-me" artist behind the plate-glass frontage. An advertising expert explained that the demonstration failure was "because onlookers just naturally associated the French maid with things not in their class. The window stopped them—but they didn't go in to make inquiries or to buy. With the plain type of demonstrator, they did."

Study Their Tastes

The food manufacturer who standardizes his dealer newspaper advertisement and his window display materials will come up against a blank wall if he stages his demonstrations with ruthless disregard for the varying clientele patronizing his different dealers. Why this subtle difference when a window display or newspaper advertisement aims at the public at large? A window demonstration is a substantial selling step beyond other publicity aids; it is, in fact, the next thing to showing how the housewife might do this or that. In other words, she is voluntarily participating in part of a household economics course.

The natural reaction—and, considering that, the buyer is always on the defensive—is to look at the proposition from *her* point of view. Granted she is interested in adding variety to her desserts, but just what do we imply by *her* point of view? Suppose she employs a plain cook and your "star" actor is a very Frenchy chef of the masculine gender, who, in his most professional manner, mixes ingredients for the most complicated of sauces and whips

with which to add the crowning touches to your dessert product. The minute her brain begins to function, back of it is the notion: "Mary would have a fit if I had her work on such elaborate desserts, and probably quit if I insisted." The case we have advanced probably is far-fetched, for the good and simple reason that no food manufacturer would employ a French chef as a demonstrator, anyway, unless he were appealing exclusively to clubs, hotels and high-class restaurants. The point, however, will not be missed, we are sure.

In these days, when the majority of housewives no longer spend hours in the kitchen working on some toothsome morsel, the demonstration line had better be drawn so that only the quickly prepared dessert combinations are featured. Any editor of a woman's magazine will back us up that we are on the right track—and he ought to know.

The Resourceful Demonstrator

A furniture firm was once out for dignity in putting on an exhibit showing how the city dweller could overcome lack of housing space by making certain pieces of furniture serve several definite purposes, such as the davenport and the semi-portable table. Well, in an unguarded (or joyous) moment, while making up the bed, the young woman bounced on the resilient bed spring. The onlookers thought this was very funny, and the demonstrator was clever enough an actress to let it pass as a deliberate act on her part.

The manager wondered what all the commotion was about and was told. He was strong for cutting it out—"too frivolous for our firm." Wiser counsel prevailed after he talked it over with the other executives, with the result that the graceful bouncing on the edge of the bed became part of her "act"—and never failed to put the audience in a good humor. It was a piece of comedy which was not out of place, inasmuch as it brought out the springiness of the bed springs. Even serious plays and novels have their comedy moments.

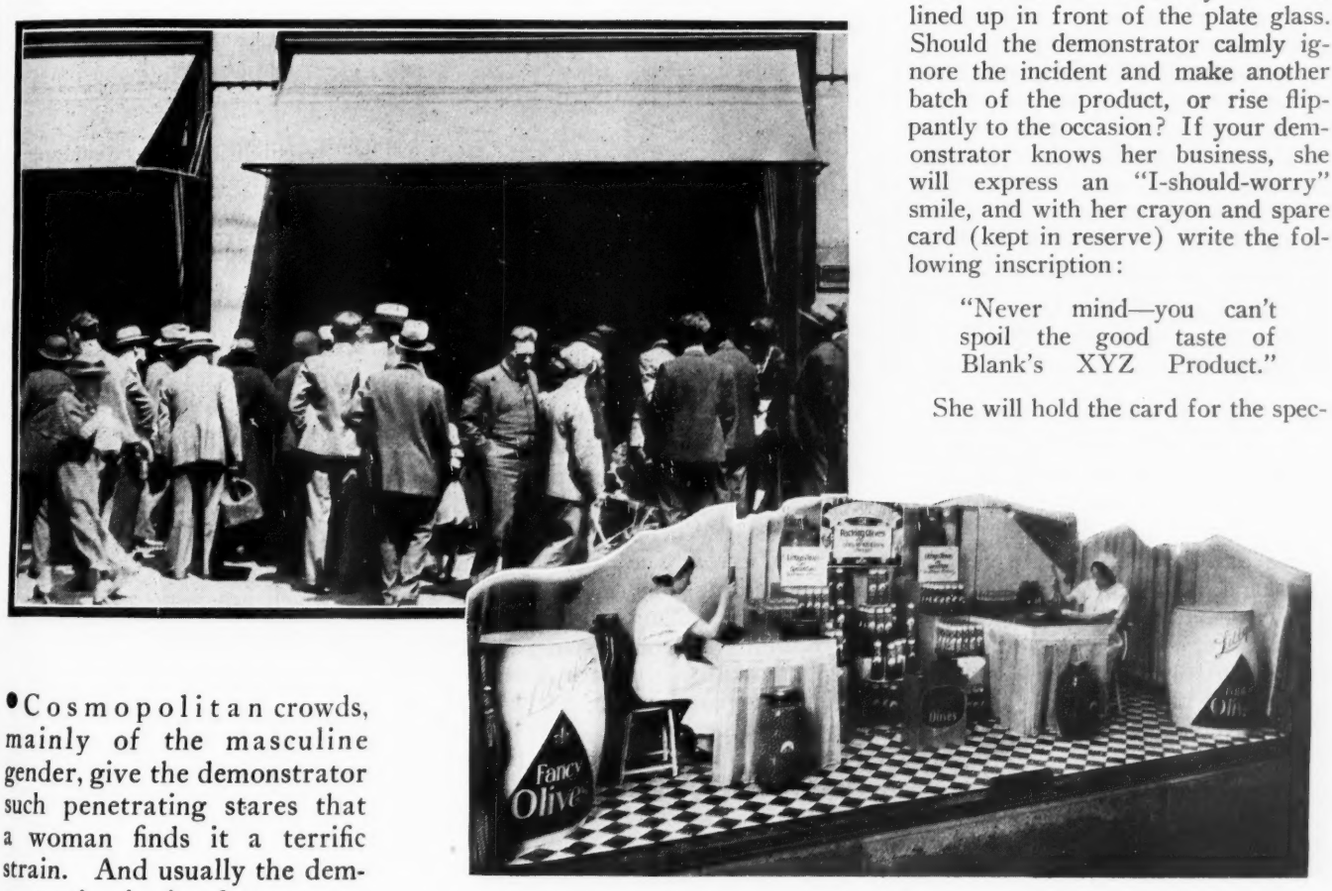
Suppose, however, the demonstrator, in mixing the ingredients for your food specialty, has the misfortune to tip over the bowl? It is an embarrassing situation to be in, is it not? It will seem funny to those lined up in front of the plate glass. Should the demonstrator calmly ignore the incident and make another batch of the product, or rise flippantly to the occasion? If your demonstrator knows her business, she will express an "I-should-worry" smile, and with her crayon and spare card (kept in reserve) write the following inscription:

> "Never mind—you can't spoil the good taste of Blank's XYZ Product."

She will hold the card for the spectators to see, and they will think it is part of the act.

All of which goes to prove that resourcefulness is a vital qualification of the successful demonstrator. The chronic bungler has no place in the show window.

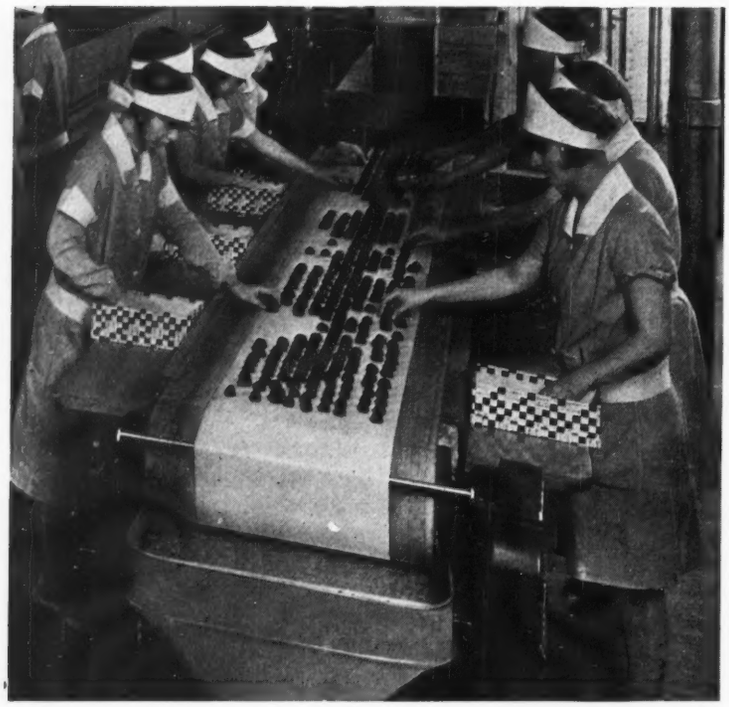
Where are demonstrators recruited from? Successful door-to-door canvassers, mostly. The difficulties of the work develop resourcefulness in meeting the exigencies of each and every occasion; otherwise, they would soon be frozen out of their chosen calling.



• Cosmopolitan crowds, mainly of the masculine gender, give the demonstrator such penetrating stares that a woman finds it a terrific strain. And usually the demonstration is aimed at women, who often are crowded out by the male loafers.

• This type of window demonstration usually is very easy on the demonstrator for she is performing tasks to which she has long been accustomed and does not call for the entertainer type of woman. Any presentable young woman from the factory can do it.

Chocolate....*A Food A Confection An Ingredient*



By BENJAMIN J. ZENLEA
Chief Chemist, Rockwood & Co.
Brooklyn, N. Y.

ACCORDING to definition, chocolate, in a technical and restricted sense, is the solid or plastic mass obtained by grinding shell- and germ-free cacao (cocoa) nibs and is the product commonly known as chocolate liquor. By common usage, however, the term "chocolate" usually is applied to sweet chocolates, milk chocolates and chocolate-covered centers.

Its quality is judged jointly by the chemist and the chocolate expert. The chemist considers the purity of the ingredients and their compliance with the pure-food laws. He judges the difference in color, sweetness and fluidity as due to differences in percentages of chocolate liquor, sugar and added cocoa butter, and in the case of milk chocolates, the percentage of milk solids. The chocolate expert is chiefly concerned with its appearance, color, flavor, texture and workability.

Although chocolates may be similar in composition as to percentages of chocolate liquor, sugar, added cocoa butter and milk solids, there is a wide variation in their flavor and texture. Of the many varieties of cocoa beans, approximately thirty are used in the larger chocolate factories. The nibs of these beans vary in color, chocolate character, pungency, acidity, mildness, bitterness and creaminess. Whereas the delicate flavors of the nibs are developed by careful curing, storing, roasting, cleaning and milling, the flavor of the resulting chocolate is dependent upon the skill used in the blending, milling and conching of the various varieties of nibs with the proper quantity of sugar and cocoa butter; milk solids, when used, and added flavors.

Table I—Approximate Composition of Chocolate Coatings.

Type	Chocolate Liquor	Sugar	Total Fat	Whole-milk Solids	Skim-milk or Buttermilk Solids
Bitter	100	0	50–56	0	0
Bitter-sweet	80–95	5–20	40–50	0	0
Mild bitter-sweet	50–75	25–38	38–42	0	0
Dark-sweet	25–45	40–50	34–42	0	0
Medium dark-sweet	20–40	45–55	32–42	0	0
High-grade light-sweet	15–25	40–50	34–39	0	0
Low-grade light-sweet	5–15	55–68	31–39	0	0
Sweet milk	7–17	35–55	28–39	12+	0
Ice cream bar	9–29	29–39	50–60	12+	3–6
Skim-milk, butter-milk, malted-milk	7–17	35–55	30–40	0	12+

Small quantities of flavoring materials, such as vanillin, coumarin, coffee, cinnamon, peppermint, orange, lemon, anise, and synthetic cocoa-bean flavor also may be used.

The possibilities in developing blends of chocolate are unlimited. Most formulas are limited to blends of one to six varieties.

Although there are many varieties of chocolates on the market, they can be classified into the following general types: bitter-sweet, dark-sweet, medium dark-sweet, light-sweet, milk, ice cream bar, skim-milk, buttermilk, malted milk, imitation, and lecithin coatings.

It is difficult to state exactly which type of chocolate coating is best suited for a particular center. The choice depends on a number of factors, among which are sweetness, texture and blending properties of both the center and coating.

Chocolate liquor of commerce is known also as chocolate, bitter chocolate, chocolate liquor, chocolate paste, bitter chocolate coating and unsweetened chocolate. It is the product obtained by grinding cocoa nibs, freed from shell or husk and germs, usually through triple-stone mills, Bausman disk mills, or similar devices. It is known in two types: "natural" and "Dutch process." The Dutch process, or alkalized, type usually is prepared by boiling the nibs in a ½ to 3 per cent solution of alkalis such as potassium, sodium, or ammonium carbonates or bicarbonates. The water is evaporated to about 10 per cent of the weight of the nibs and the nibs are given a light roast to dry them thoroughly, after which they are treated in the same manner as for "natural" chocolate liquor. "Dutched" liquors are darker in color, less bitter and less acid. If "Dutched" with more than 1½ per cent of alkali, they

• BECAUSE OF ITS DELECTABLE FLAVOR, concentrated food value, pleasing appearance, keeping qualities, and convenience for handling, chocolate is prized as a confection and a food by the young, the old, the convalescent, the athlete, the warrior, and the explorer. Even history tells us that the cacao tree was considered of divine origin and that its seeds were "Food of the Gods."

• YET AS AN INGREDIENT or an intermediate in the manufacture of other foods chocolate must stand on its economic merits. It must be selected on the basis of suitability for intended use.

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are inclined to have a "soapy" taste. The natural chocolate liquor has a pH value of 5.1 to 6.2; the "Dutched" chocolate liquor a pH value of 6.0 to 7.8, depending on the original pH of the nibs and the quantity and kind of alkali used.

Chocolate liquors for commercial use are molded into 10-lb. cakes and in ¼- to 1-lb. cakes for household use. They are used for coating very sweet centers, such as hand-roll centers, and butter creams. They also are used as an ingredient for ice cream, candy, culinary products and chocolate syrup. The "Dutched" liquor is used for flavoring tobacco and for general uses where a milder and darker product is desired. Chocolate liquor is often used in place of cocoa powder when a creamier and richer product is desired. The high fat content—50 to 56 per cent—however, makes its use difficult without such aids as homogenizers or emulsifiers. It is considered "pure" if it contains not less than 50 per cent cocoa fat, and on the moisture- and fat-free basis not more than 8.0 per cent of the total ash, not more than 0.4 per cent of ash insoluble in hydrochloric acid, and not more than 7.0 per cent crude fiber. The standards for "Dutched" liquor are the same as for natural process liquor, after due allowance is made for the kind and quantity of alkaline substance added. Not more than 3 lb. of potassium carbonate, or its neutralizing equivalent in other alkaline substances, to each 100 lb. of cocoa nibs is permitted. (*The Federal Food and Drug Administration standards F. I. D.* 191 *and F. I. D.* 202 *for chocolate liquors are basic for all chocolate products.*)

Table II—Ingredient and Coating Uses for Chocolate.

Uses	Chocolate liquor	Bitter sweet	Dark sweet	Medium dark sweet	Light sweet	Milk chocolate	Ice cream coating	Skim milk, buttermilk	Imitation coating	Cacao butter
Butter creams	•	•	•							
Candy bars				•	•	•		•		
Carmels				•	•			•		
Chocolate bars				•	•	•				
Chocolate ice cream	•									
Chocolate pops							•		•	
Chocolate syrup	•									
Cocoanut creams				•					•	
Cordials		•	•							
Culinary products	•									
Frappé		•							•	
Fruit flavored creams				•					•	
Fudge	•	•	•		•			•		
Hand rolls	•	•								
Ice cream bars							•		•	
Italian creams		•								
Jelly centers				•					•	
Lotions										•
Marshmallows, marshmallow crackers		•	•	•	•			•		
Nougats			•	•	•	•		•	•	
Nuts, nut clusters, nut rolls				•	•	•		•		
Nut flavored creams			•	•					•	
Ointments										•
Peppermint creams	•	•	•							
Raisins, dates, figs				•		•		•		
Sponge centers				•					•	
Suppositories									•	•
Tobacco	•									
Vanilla creams				•		•		•	•	

Sweet chocolate, sweet chocolate coating, is chocolate mixed with sugar and/or dextrose with or without the addition of cocoa butter, spices, or other flavoring materials. This definition applies to all sweet coatings regardless of the quantity of sugar and chocolate liquor they contain. The phrase "other flavoring ingredients" is somewhat vague and has led to some misunderstanding. The definitions for food products are so framed as to exclude anything not mentioned by name, but strict interpretation of "flavor" would include any and all flavoring ingredients such as small quantities of malt, malted milk, whole milk, skim milk, dairy butter, butter oil and essential oils. Although dextrose (corn sugar) is permitted in chocolate, either alone or mixed with sucrose (cane sugar or beet sugar), it has been used only to a very limited extent. Dextrose chocolate is different from sucrose chocolate, both in flavor and physical properties. Its use requires education of the public taste to a new type of chocolate, and the manufacturer to new ways of blending with the proper centers. In a spirit of constructive criticism and fairness, it may be said that dextrose chocolate has not been studied sufficiently for one to denounce it or to extol its virtues.

Bitter-sweet coatings are prepared by adding sugar to chocolate liquor with or without flavor and refining. As the sugar content increases and the chocolate liquor content decreases mild bitter-sweet coatings result and additional cocoa butter becomes necessary to obtain the proper viscosity. Bitter-sweet chocolates are dark in color and are used chiefly as coatings.

Further increase in sugar and decrease in chocolate liquor content produces dark-sweet chocolates, of which medium dark-sweet coatings are the most popular. They are used to a great extent for molding chocolate bars and a variety of solid chocolate items for the retail trade, as they are neither too sweet nor bitter for the average consumer.

Light-sweet coatings are of the expensive and the cheaper types. The expensive type is prepared from blends of light-colored and mild but chocolate-like cocoa nibs such as Java, Ceylon, Maracaibo and Samoa, and a moderate quantity of sugar—usually 45 per cent. These coatings are very expensive and are used for enrobing moderately sweet centers of the better sort. They are finely milled, well conched and delicately flavored,

and are representative of the chocolate expert's skill in the art of fine chocolate making. The cheap type owes its light color to the small quantity of chocolate liquor and the large quantity of sugar used in its manufacture. These coatings are used for special purposes, and for enrobing nut and raisin confections and candy bars or rolls containing peanuts, marshmallows, caramels and fudge. These coatings, though lacking in chocolate flavor and being excessively sweet, nevertheless blend nicely with the types of centers mentioned in Table II. The fact that a small quantity of chocolate liquor is used in cheap light-sweets does not detract from the fact that the coating has been made from ingredients common to all chocolate coatings: "pure" chocolate liquor, sugar and cocoa butter, and is entirely within the definitions for a "pure" sweet chocolate as given in F. I. D. 191.

Milk chocolate, sweet milk chocolate, is the product obtained by grinding chocolate with sugar and/or dextrose, with the solids of whole milk, or the constituents of milk solids in proportion normal for whole milk, and with or without cocoa butter, and/or flavoring materials. There are many types of milk chocolate varying in degree of milkiness, chocolate character, color, fineness and viscosity. Such chocolates are prepared from fresh whole milk which is first evaporated, or from whole-milk powders, both spray and roller process types, or from skim-milk powder to which has been added a quantity of milk fat, either in the form of dairy butter or butter oil, necessary to convert the skim-milk solids to whole-milk solids, of which milk chocolate must contain not less than 12 per cent.

In converting skim-milk solids to whole-milk solids by the addition of dairy butter, one should bear in mind that dairy butter contains 80 to 84 per cent of milk fat and approximately 16 to 20 per cent water, buttermilk and salt. The difficulties of removing the water and blending of the dairy butter with the skim-milk solids and the fact that 100 lb. of dairy butter yields approximately 80 lb. of milk fat make this method of milk-chocolate preparation undesirable and often more expensive than with the use of whole-milk solids. Milk chocolates owe their popularity to their delicate milk flavor and lack of harsh and bitter taste. The manufacture of milk chocolate with an appealing milky flavor is a difficult art and is a secret closely guarded by chocolate manufacturers. Milk chocolates are sold over the counter of the ice cream parlors and candy stores as broken milk chocolate and in the form of bars which vary in weight from a fraction of an ounce to a pound. Milk chocolate also is molded in 10-lb. cakes and sold as coating.

Ice cream coatings are chocolate coatings in which a high fat content is necessary to obtain a very thin running chocolate which will quickly drain off the solid ice cream center when dipped. Ice cream coatings may be of the dark-sweet, medium dark-sweet, light-sweet, and milk-chocolate types, due allowance being made for the high fat content. Their higher cost is due to their high cocoa-butter content, which at present is, next to milk solids, the most expensive ingredient in low-priced chocolates. As ice cream coatings are frozen instantly on the ice cream and are kept at below freezing temperatures, the user of ice cream coatings is not concerned with exact enrobing temperatures or with fat or sugar bloom. His chief problem is to combat the thickening of the chocolate due to moisture from the melting ice cream. This difficulty often is remedied by the incorporation of 0.3 per cent lecithin dissolved in cocoa butter.

Skim-milk, buttermilk, malted milk, chocolate coatings are sweet chocolate coatings containing not less than 12 per cent respectively of skim-milk solids, buttermilk solids, or malted-milk and milk solids. These coatings are not defined in F. I. D. 191, nor in later additions to the federal food laws. Buttermilk coatings and skim-milk coatings have become popular in the last few years. They are a cross between milk-chocolate coatings and light-sweet coatings. Skim milk and buttermilk cut down the excessive sweetness of a light-sweet coating without sacrificing the light color. These coatings, in the absence of a published definition covering them, should be labeled and sold for exactly what they are, namely: "skim-milk," "buttermilk," or "malted-milk" chocolate coatings.

Modified chocolate coatings are sweet chocolate coatings of various types, such as dark-sweets, light-sweets and ice cream coatings, to which has been added a small quantity of skim milk, buttermilk, whole-milk or malt sugar. The quantity added usually is 3 to 5 per cent. These ingredients are added as flavoring ingredients and also to cut down the excessive sweetness of a light-sweet coating, and to cut the bitterness of a dark-sweet coating. In addition to these reasons, such ingredients are used to some extent in ice cream coatings to obtain an eating chocolate of less brittleness than the ordinary chocolate coating when frozen on the ice cream. Such ingredients, when added in small quantities for flavoring purposes and not for the intent of giving the public the impression that they are milk chocolates by either appearance or labeling, need not be declared.

Imitation chocolate coatings are mixtures of cocoa, sugar and a substitute fat such as coconut oil, coconut stearines, and illipé oil, with or without flavoring ingredients. They are used mostly for enrobing cheap centers and for medicated products where a higher-melting-point chocolate is desired than is obtained with cocoa butter. Coconut-oil coatings are used to some extent for ice cream. Imitation coatings are what their names imply: imitation chocolate coatings, often lacking the true flavor and taste of pure chocolate.

Lecithin chocolate coatings are chocolate coatings of all types to which has been added a small quantity of lecithin, usually not exceeding 0.4 per cent of lecithin dissolved in cocoa butter. Lecithin modifies the physical properties of chocolate to some extent. Coatings can be made with 3 to 8 per cent less added cocoa butter, making them less fatty. Lecithin coatings resist thickening due to moisture, allow greater flexibility in enrobing temperature, and cover centers more uniformly. Lecithin stabilizes chocolate coatings so that the viscosity is only slightly changed by aging, heating or mechanical manipulation.

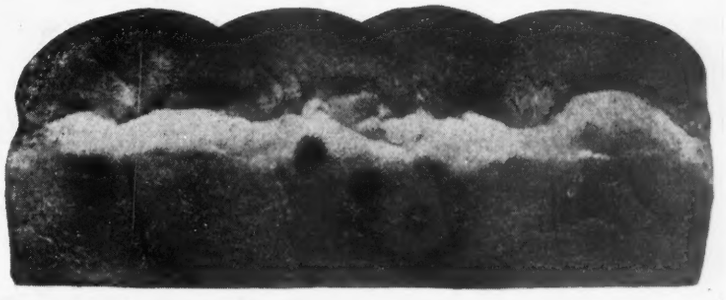
Cacao (cocoa) butter is the only fat common to chocolate; it is the edible fat obtained from sound cacao beans either before or after roasting. It is a yellowish white solid having a faint agreeable odor and a bland chocolate-like taste, and is usually brittle at temperatures below 25 deg. C. (77 deg. F.). It has a free fatty acid content of 0.70 to 1.4 per cent calculated as oleic acid. It is obtained by hydraulic pressing of chocolate liquor in the manufacture of cocoa powder, by passing cocoa fines through the expeller press, and by solvent extractions from low-fat cocoa press cake and cocoa fines.

Several years ago cocoa butter was

(Turn to page 530)

Sanitation Is Essential

To Control Micro-organisms and Miscellaneous Insect Pests



Spots of mold appearing on the surface of a loaf of bread, which will soon be more or less completely covered.

By **HARRY STINER**
Los Angeles, Calif.

BOOKLICE, or psocids, usually are about one-sixteenth of an inch long, gray to black in color, generally wingless and quite active. They have a wide abdomen and head, but a narrow thorax or center. Certain forms will be found in low, moist places where they seem to feed on fungus, molds, fermenting cereals and similar products. Others forms may be encountered in drier sections around cereals.

Infestations in books, cereals and the like may be destroyed by fumigating with any of the gases listed in No. 8 of the formulas[1] that the material itself will permit. Infested sections such as cabinets, storeroom floors and semi-moist spots may be treated with roach spray, fly spray or a fumigant spray (see Nos. 1^2, 4^2 and 8^1 of formulas). Moist or wet open spots usually are best treated with sodium fluoride (see No. 2^2 of formulas).

Silverfish and *fire brats* are two forms of the bristle-tail group commonly found in food plants. They differ mainly in habits and color. Each is about three-eighths of an inch long, delicate and quite rapid in its movements. Their bodies are covered with small scales and they have two comparatively long antennae.

The silverfish is of a silvery gray color. It frequents dry offices and storerooms and may do considerable damage to books and supplies by feeding on glued bindings.

The fire brat is of a dark mottled gray color. In food plants it is generally encountered around the dry, warm inner masonry of the building. At times this pest will accumulate in large numbers in and around the warm ovens of bakeries, where it darts rapidly across unbearably hot surfaces with no apparent ill-effects. It is seldom considered of importance except for its presence. Books, containers or entire rooms may be fumigated successfully with any of the gases listed in No. 8^1 of formulas. Infested spots may be sprayed with roach spray, fly spray, fumigant spray or dusted with roach powder with good effects (see Nos. 1^2, 2^2, 4^2 and 8^1 of formulas).

European earwigs average about one-half inch long and are usually dark brown, slender and fairly active. This insect is equipped with two long, pointed, hornlike projections in the rear, which may be either curved or straight. All earwigs are primarily outdoor pests; the European earwig, however, will occasionally enter buildings, where it may collect in large numbers and do considerable damage to old clothes, cloth or raw materials. The entire field of damage this pest may cover in a food plant is not known; however, it may be considered more or less on the same basis as the house cricket [3] and controlled in a similar manner.

"Spiders" in ordinary parlance usually means those forms of the spider group that are easily visible to the naked eye. They usually possess a comparatively small combination head and thorax, large abdomen and the regulation eight legs. Many of the spiders found in a food plant and certainly those most noticed are web spinners. With very few exceptions, spiders are not poisonous and destroy nothing essential to a food plant. These pests are seldom of sufficient importance to cause concern in plants where proper sanitation and cleaning obtain. Local destruction of spiders is readily obtained with roach spray, fly spray or fumigant sprays (see Nos. 1^2, 4^2 and 8^1 of formulas).

The *pill bug,* or sowbug, usually encountered in food plants is convex on the top side, about nineteen-sixteenths of an inch long when full grown, of a dark slate color above and paler beneath. It has seven pairs of legs and two antennæ, is very active and usually inoffensive.

Pill bugs may be poisoned by baits, may be trapped under bags, boards, etc., and may be sprayed or fumigated; however, as they are found only in wet places and cannot live elsewhere, and these spots usually represent a distinctly unsanitary condition, a far better procedure is to dry up the spot or treat it with roach dust (see No. 2^2 of formulas).

The microscopic organisms dealt with under this heading as pests are molds, bacteria and yeast. Nearly all decomposition occurring in foodstuffs may be attributed directly or indirectly to these organisms. Without them the great mass of waste that is produced each day would soon make life unbearable unless destroyed by artificial means. In a food plant, however, where the greater part of this accumulating material is removed frequently, their activities as destructive agents become a matter of serious concern because of attacks on usable raw materials.

Molds are small, vari-colored plant

[1] FOOD INDUSTRIES, April, 1934, p. 160.
[2] FOOD INDUSTRIES, March, 1934, p. 113.
[3] FOOD INDUSTRIES, October, 1934, p. 461.

growths, the individual units of which are microscopic but which may multiply rapidly into great numbers producing a characteristic velvet-like appearance. The spores (seeds) of molds are ordinarily present and alive on all exposed materials below 200 deg. F., as well as floating about in the air. In this spore state they are both harmless and inactive, but will readily spring into action with the introduction of moisture and favorable temperature.

In addition to their appearance, molds send their mycelium (hyphae) in all directions through the material, disorganizing the cellular structure and producing enzymes (or chemical ferments), which in turn create other compounds by their catalytic action. Rancidity, or musty and fermentative odors, usually accompany these changes.

The active temperature range of molds is broad and varies considerably with the type. Their optimum activity usually occurs between 60 and 100 deg. F. A temperature of 140 deg .F. for 3 minutes—the common specification for milk pasteurization—is supposed to destroy over 90 per cent of all micro-organisms. The same effect is obtained with 180 deg. F. for a few seconds; but it requires about 245 deg. F. (15 lb. steam pressure) for 15 to 30 minutes to destroy all types and forms. A satisfactory sterilization of many objects may be obtained with a boiling-water temperature (212 deg. F.) for a few minutes, but should never be taken as thorough. In the preservation of materials by constant heat, however, 212 deg. is often of importance in that it stops the activities of enzymes.

Cold is of little importance in the complete sterilization of micro-organisms in general, but, as a temporary control or inhibition, it is effective and commonly employed. Beginning at temperatures below 50 deg. F., the naturally rapid development of micro-organisms is checked progressively as the temperature is lowered. But, although complete extinction is possible by this method if carried sufficiently far, that desirable goal lies nowhere within the range of cold-storage temperatures.

In the control of molds, a safe precaution is to assume that mold spores are always present on all materials not sterilized and in sealed containers and that they will immediately develop when conditions become favorable to them.

Although many molds are used in the development of certain foods and most molds may be considered harmless—except for their odor-producing and destructive effects—a few of them are deleterious to health and may cause disease or even death; therefore every precaution should be taken to prevent mold development and all distinctly moldy foods should be destroyed.

Three stages of gray mold *(Mucor mucedo)* development, magnified about 20 to 1 and viewed from the side, not from the top, as the eye would naturally see them. At left, the mycellum, or thread-like growth, is shown below the surface of the dried fruit upon which it is growing, with some of the hyphae projecting above the surface and terminating in minute fruiting bodies. At the center, these reproductive organs have grown to maturity, each full of spores, while at the right the ripe spore cases have burst, ejecting thousands of tiny spores from which new mold growths may develop.

Bacteria, like molds, are microscopic organisms and are in most part closely related in both structure and activities. Under favorable conditions they develop rapidly, and in control work one or more types may be considered present and alive in or on all foodstuffs not sterilized and sealed.

Many bacteria are of economic importance in the manufacture and conversion of food materials, others are beneficial from a health standpoint; still, there are many which produce conditions poisonous to physical life and yet others that cause putrefaction or decay in all organic substances. The development of poisonous bacteria is often associated with the putrefactive types, although these usually are destroyed by the higher temperatures of processing; however, the degeneration caused by the other forms usually makes food unfit for human consumption—whether sterilized or not—and this alone should always be cause for its destruction.

As a rule the decayed portion of a food material will have a more or less characteristic odor and appearance. This cannot always be relied upon, however, as decay will often start at the interior and may become more or less universal before appearing on the surface. At other times the surface may be just moist enough to induce the development of bacteria, but beneath this ideal conditions may exist for unlimited action.

The final result of bacterial action on food materials is in many respects quite like the molds. However, they require a more liquid state in which to grow and are for the most part free-floating, single, egg-shaped cells, depending upon simple division for increase. Like molds, bacteria produce enzymes, which in turn effect changes in the materials.

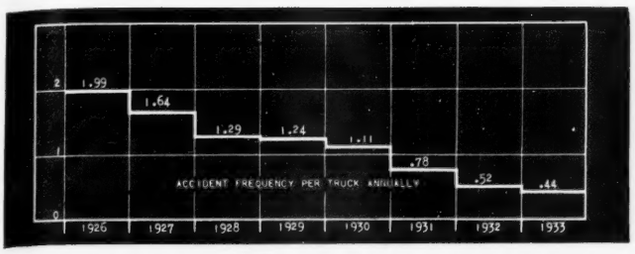
Yeasts also are single-celled organisms. They are nearer in appearance, habits and food requirements to the bacteria than the molds. They, too, should be considered present and alive in some form in nearly all foodstuffs not sterilized and sealed; requiring only a favorable opportunity to develop. The function of yeasts is mainly the production of fermentation, through the action of their enzymes on sugars. In many branches of the production or conversion of certain foods they play a very important part, but from the pest-control standpoint they are capable of creating heavy losses by causing premature developments in raw materials.

Yeasts usually are associated with a distinctly liquid medium, but otherwise general control measures are much the same for all three organisms in this group.

Whether control of the bacterial group as a whole is centered in the cold-storage room or in the most exposed parts of the plant; whether it be for the protection of meats, fruits, flour, or in the purification of the accumulations of materials on utensils and tables, or the inevitable waste on the floors, the first essential to success always is sanitation.

Truck Accidents Reduced By 78 Per Cent

And the Cost of This Saving Is Almost Negligible



Year by year the N.B.C. safety plan has reduced the number of truck accidents, until they are only a fraction of what they were in 1926.

By H. T. EGGERT
Insurance Department
National Biscuit Co.
New York, N. Y.

SINCE 1926, National Biscuit Co. has reduced its automobile truck accidents by 78 per cent and its public-liability and property-damage insurance premium by 60 per cent. With approximately 1,500 trucks in daily service, the savings in premium amounts to tens of thousands of dollars in the course of a year, to say nothing of the elimination of loss of life, untold suffering and misery from personal injuries, and property destruction—which is the first thought of the company.

This important curtailment in operating expenses has been effected by a psychological safety program instituted several years ago. Directed from the New York office through the 350 branches of the company, the plan includes many devices for making and keeping the personnel safety minded.

Hold Safety Meetings

Each of the larger branches holds a safety meeting every month to discuss causes of accidents and ways and means of preventing them and to consider specifically accidents that have occurred in that branch. An outsider, frequently a member of the local police department or a safety worker, usually addresses these meetings, lending authoritative advice on safe driving. Each program also includes presentation of a more or less technical paper by one of the drivers, this paper covering a particular phase of accident prevention, such as the causes of accidents at street intersections and how to avoid them.

There, too, is a monthly get-together of the safety committee in each branch, this committee consisting of the manager, a route foreman and a driver. The committeemen analyze the accidents of the previous month and fix the responsibility.

Effective in keeping the idea of safety constantly before the driver is a vest-pocket card given to each man. Upon receiving this card, the driver puts his signature to a pledge that he will drive carefully and courteously, this being on the back of the card. On the reverse side is a statement that the driver has operated National Biscuit Co. commercial vehicles for a certain length of time without an accident. And below this, the months of the year are blocked off, and a N.B.C. seal is pasted over each month that the driver has no accident. In case of an accident, it is recorded in the space and the seal is omitted.

All drivers carry this card. Each "Uneeda" seal indicates a no-accident month, and the drivers take pride in obtaining a series of these.

This certifies that on January 1, 1934
John Jones
has, for a period of five years, operated our commercial vehicles without an accident and that for 1934 his record is as follows:
NATIONAL BISCUIT COMPANY
John Doe
Manager

1934 STAMP INDICATES NO ACCIDENTS				OCT. ACCIDENTS
Uneeda	APR. ACCIDENTS	JUNE ACCIDENTS	AUG. ACCIDENTS	NOV. ACCIDENTS
Uneeda	MAY ACCIDENTS	JULY ACCIDENTS	SEPT. ACCIDENTS	DEC. ACCIDENTS

The best time to talk safety to a driver is while he is at the wheel. This card, fastened to the dash, fulfils that function.

Another means of inspiring pride in a good record and shame for a poor one comprises accident score cards which are posted conspicuously in the branches. These list each driver and have spaces opposite the names for every month in the year. Gold stars in these spaces indicate no-accident months. Black marks bespeak accidents, and are given even though the accident be of the "non-responsible" type. If the marks were given only for responsible accidents some of the drivers might in their accident reports misstate particulars in their favor.

Put Slogans in Branches

Also posted in the branches are safety slogans printed in large, conspicuous type. A typical one reads, "DON'T—speed or drive recklessly, let motor idle for long periods, carry passengers except authorized, allow others to drive your car." Another exclaims, "To avoid accidents have your front wheels against the curbstone when stopping on a hill!"

It's one thing to talk safety to a driver when he's not in his truck, quite another to caution him when he's actually driving. But N.B.C. does both. The main office sends to the branches warning cards to be placed in holders on the dash of the vehicle, printed on both sides that they may be turned over for double

service. The cards, for example, may read, "Keep to the right, make right turns sharp, make left turns wide," or, "Watch out for the other fellow; look to all sides before turning left."

One way of reminding the driver that his income depends upon safe driving is to inclose a safety warning card in his pay envelope. This N.B.C. does, too. A sample payroll card reads, "Driving is a real job. Don't do or think of anything else while at the wheel."

Inspires Safety Talk at Home

Perhaps one of the most effective ways to make a man a safe driver is to get his wife interested. To accomplish this, N.B.C. sends out monthly, over the signature of the branch manager, a personal letter to each driver. This reaches the home in the morning after the man has gone to work, and in all probability is noticed by his wife, who starts inquiries that lead her to find out what it's about.

One of these personal letters reads:

"Re: Safe Driving—At Intersections.

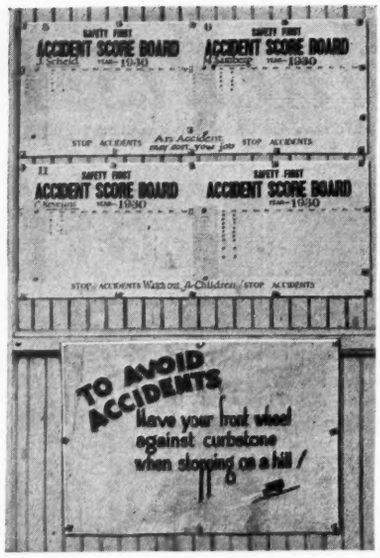
"Too often drivers are inclined to assert their right of way in spite of an impending collision. An automobile approaching from the right has the right of way provided the car on his left has not yet entered the intersection. However, a safe driver will allow the car coming from the left at a rapid speed to proceed, and thereby prevent an accident. There is no necessity for taking a chance in beating out a car at the intersection, as the time lost in the slight delay may mean many hours, days or months saved by avoiding large expenses in property damage, serious personal injury and long-drawn litigation.

"Slow down at intersections and be prepared to stop if necessary.

"Never dispute the right of way at intersections, but let the other fellow take the chances—Play Safe!"

The main office frequently writes branch managers to direct their attention to the importance of safety measures. And every month each branch manager receives a statement covering accidents for the entire company. The statement indicates whether the accidents have occurred in backing, speeding, at intersections or what not. This enables the branch manager to take precautions against such accidents among his own drivers.

The company not only takes measures to keep safety in the minds of the drivers but it also arouses pride in their no-accident records. The


SAFETY FIRST
ACCIDENT SCORE BOARD
SAFETY FIRST
ACCIDENT SCORE BOARD
TO AVOID ACCIDENTS
Have your front wheel against curbstone when stopping on a hill

The name of each driver is listed on accident score board. For each month without an accident he gets a gold star opposite his name; for accidents, it's a black mark. Below is one of the safety slogans posted at the branches.

vest-pocket pledge cards with their no-accident seals and the bulletin-board score boards with their gold stars are quite effective for this. But, in addition to these, the company

Quarterly sectional contests between branches arouse interest and pride in safe driving. Here is a banner won by the Rochester branch by having its name appear as the winner for two quarters.

gives out certificates of award to branches going through a month without an accident and also promotes sectional safety contests among the branches.

The contests are over quarterly periods and are held among branches grouped under a plan which takes into consideration all factors such as mileage, hazardous conditions of driving, and number and size of trucks. The branch winning the contest has its name placed upon the sectional safety contest banner, and the one with its name appearing most often during the year receives the banner for permanent keeping.

To make sure that drivers are competent to begin with, the prospective driver must submit to a severe road test and satisfy the branch manager that he is fully qualified to operate a truck. And, to take care that the trucks are absolutely sound when they go out on the road, the company not only has its mechanics check them frequently but requires each driver to report the condition of the vehicle when he brings it in each evening.

Obviously, it would be folly for a company to take such care in matters of safety and yet permit unsafe drivers to continue to handle its trucks. To weed out the poor drivers, the company keeps a complete record of all accidents, both at the branch and main offices, and when a driver has an accident a check is made to determine his past record. If the record is poor he is warned; then, in event of a further responsible accident, he is discharged. If, for instance, the driver's record shows two responsible accidents within a period of six or eight months, this usually is cause for action.

Speed Causes Most Accidents

It is interesting to note that the experience of N.B.C. shows that speeding too fast for conditions causes most of the accidents. Inattention, or failure to be alert, ranks second, while improper backing is third. Much warning as to the hazards of these three driver weaknesses is necessary.

One of the appealing features of the N.B.C. safety program which eliminates so many accidents is the fact that to conduct it involves no expense except a very small sum for printing and mailing. No additional personnel is needed, because the reduction in the number of accidents cuts the time devoted to handling accident cases.

Getting California Fruits Into Foreign Markets

By E. M. MRAK, S. V. CAMPBELL and H. P. ROYER

Fruit Products Laboratory, University of California

California State Bureau of Commerce

CAN Californian fresh fruits be shipped to England and Germany for use by the manufacturers of preserve and jams? This question was asked by California growers who sought to participate in a trade that had been mostly supplied from Serbia, Spain and Canada, with fruit shipped in barrels and large tinned containers. Its answer was sought during the past two years in a series of shipping tests conducted by the California State Bureau of Commerce and the Fruit Products Laboratory, University of California.

Barreled fruits were the subject of these tests, and sulphurous-, formic- and benzoic-acid solutions, and sulphur dioxide were used as preservatives. From the start, sulphurous acid was considered the most useful. It kept the fruit in good condition, was relatively cheap and could be easily drawn off. The objection to the use of sulphur dioxide was that traces of the preservative remaining in the products tend to promote corrosion of cans. Benzoic-acid solutions do not prevent enzymatic action or softening of the fruit. Fruits preserved with formic-acid darken and deteriorate.

Peeled whole and halved midsummer peaches were shipped to Germany in 1931 packed in sulphurous- and formic-acid solutions. Upon arrival, superficial inspection indicated that the condition of the fruit was good. This fruit was made into jams and jellies at the Bremen plant of Scipio & Fischer. From this test the canner drew the following conclusions: The peaches had the appearance of fresh fruit, but their flavor was driven out during boiling. The whole peaches were unsuitable for pulp because of loss during pitting. The outlet for such products in Germany was doubtful. The size of the peaches made them undesirable for jam, the pieces being too large or too small. The material could be made into marmalade, but peach marmalade was unknown in Germany. As it was considered necessary to add apple or apricot to the peach marmalade, the cost of the finished product was high. Finally, it was found impossible to remove the sulphur dioxide easily by boiling.

Sulphur-dioxide tolerance in fruit pulps in Germany at the time of this shipment was 1,250 parts per million. Tests conducted by Fruit Products Laboratory showed that finished jam made from peaches preserved in sulphurous-acid solution containing 4,100 parts per million sulphur dioxide had but 35 parts per million sulphur dioxide. Some of the marmalades made in Germany from this fruit showed 18 parts per million sulphur dioxide. Also the low concentrations of sulphur dioxide found by analyses by the Association of Official Agricultural Chemists method were less than the control test made on pulp obtained from untreated peaches.

BARRELED FRUITS preserved in sulphurous-acid solution and shipped to England and Germany make good jams and marmalades though not satisfactory for preserve manufacture

Although some doubt was expressed as to market acceptance of the peaches shipped, interest was indicated in shipments of other fruits. Therefore shipments of fresh-picked apricots, prunes and figs in 5-gal., paraffin-lined spruce pickle kegs were made in 1932. The kegs were filled soon after the fruit was picked, to avoid use of bruised or partially deteriorated fruit. The kegs were then filled with a sul-

(Turn to page 512)

Results of Examination of Finished Product

Product	Where made	P.p.m.* SO_2 in holding sol. when packed	Holding period	Treatment of holding solution	P.p.m. SO_2 in finished product	Flavor	Texture	Appearance
Fig preserves	England	5,000	2 mos.	?	23	Good	Slightly tough	Good
Apricot preserves	England	2,500	3 mos.	?	130	Good, sweet	Good	Good
Apricot marmalade	Germany	2,500	6 mos.	?	23	Too sweet	Good	Poor
Apricot confection	Germany	2,500	6 mos.	?	27	Too sweet	Tough	Poor
Fig marmalade, natural	Germany	5,000	5 mos.	?	24	Fair	Rubbery	Fair
Fig. marm. + lactic acid + color	Germany	5,000	5 mos.	?	24	Fair	Rubbery	Fair
Fig. mar. + lemon + color	Germany	5,000	5 mos.	?	24	Fair	Rubbery	Good
Fig. marm. + lactic acid + color	Germany	5,000	5 mos.	?	24	Fair	Rubbery	Good
Prune marm. + color	Germany	2,000	5 mos.	?	25	Plum-like	Good	Good
Prune confection, colored	Germany	2,000	5 mos.	?	100	Poor	Tough	Good
Apricot jam	Berkeley	2,500	6 mos.	used	60	Good	Good	Good
				discarded	90	Poor	Fair	Poor
Apricot preserves	Berkeley	2,500	6 mos.	used	70	Fair	Fair	Good
				discarded	90	Poor	Fair	Poor
Prune jam	Berkeley	2,000	3 mos.	used	120	Very good	Good	Good
				discarded	70	Good	Fair	Fair
Prune preserves	Berkeley	2,000	3 mos.	used	220	Fair	Fair	Fair
				discarded	150	Poor	Poor	Fair
Fig preserves	Berkeley	2,000	3 mos.	used	20	Poor	Good	Fair
				discarded	80	Poor	Fair	Good
Fig jam / Fig preserves	Berkeley	5,000	3 mos.	used	90	Fair	Good	Good
				discarded	160	Fair	Fair	Good
Fig jam	Berkeley	6,000	3 mos.	discarded	40	Poor	Fair	Good
Fig preserves	Berkeley	800	3 mos.	used	230	Fair	Fair	Good
Fig jam	Berkeley	9,000	3 mos.	used	220	Good	Good	Good
Fig jam	Berkeley	10,000	3 mos.	discarded	50	Poor	Fair	Good

*Parts per million.

TRUCK BODIES

Should Be Tailor-Made

To Fit the Food Manufacturer's Needs

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Developed by this method, Borden's Sales Co. is now using refrigerated truck bodies that deliver butter, eggs and poultry in excellent condition on retail routes.

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CONSIDERED as an important business builder, a fleet of twelve refrigerated trucks just put into service by the produce division of the Borden Sales Co., Inc., 99 Hudson St., New York, N. Y., marks a distinct step forward in the local retail delivery of butter, eggs, cheese, ham, bacon and, especially, dressed poultry.

To those who have associated the name Borden's for many years principally with milk, cream and allied dairy products, more recently with ice cream and with a wide assortment of cheeses, attention is called to a recent edition of *The Borden Eagle,* which stated that the produce division handles approximately eighteen million pounds of frozen eggs in a year with about a dozen eggs to the pound and in the first four months of 1934 handled eleven million dozen eggs in the shell and 8,777,000 lb. of dressed poultry. All of this produce must be held under refrigeration until sold.

Adequate warehouse refrigeration is available in the produce division's branches in New York, Chicago, Philadelphia, Detroit, Boston, Pittsburgh, Buffalo, Scranton, Providence, New Haven, and Springfield, Mass. The company's products are sold from those branches directly to retailers.

In the beginning, the company's delivery service was not adequate. As business increased and the area of delivery was enlarged, complaints arose that the butter was soft when delivered at the outer ends of the routes on hot summer days. Any goods which could not be delivered for any reason and had to be carried around in the truck all day were in even worse condition when brought back to the branch. Occasionally the tub butter softened to such an extent that it showed through the tub; print butter likewise was soft, and dressed poultry showed sweating.

A little over a year ago the produce division installed its own company-owned trucks at its four branches maintained in the New York City area. This improved the delivery service to a considerable extent but did not eliminate the trouble with the condition of the products in hot weather, because none of the truck bodies was insulated or refrigerated.

Then F. E. Pilley, vice-president of the company, decided that some form of refrigerated body should be used on all retail delivery trucks. Early in 1934, two electric trucks were put into service on two-trips-a-day city routes.

Both trucks were equipped with insulated panel bodies, one refrigerated with dry ice and the other with water ice. Both proved satisfactory in keeping the products in proper condition until delivered. However, because the mileage capacity of the truck batteries was only 35 per day, although satisfactory in the service in which they were operated, the vehicles were not flexible enough for use generally in the company's other branches.

A recitation of the foregoing facts is necessary to understand why the new fleet of trucks marks a distinct step forward.

The problem then was to select a vehicle which would be economical on both short and long routes and have a range of carrying capacity of 1,500 to 3,000 lb. for retail routes to as much as 5,000 lb. for local transfer between railroad yard, or outside warehouse, and the company branch.

The vehicle finally selected with the assistance of the Borden company's centralized automotive bureau was a standard Ford V-8 chassis with a wheelbase length of 157 in. and a rear axle ratio of 6.6 to 1.

By fitting the chassis with oversize tires, 6.50/20 in front and 7.50/20 duals in the rear, the truck's rated carrying capacity of 1½ tons, or 3,000 lb., was increased to 2½ tons, or 5,000 lb., without overloading the tires, with resultant high tire expense. To keep the larger dual tires from rubbing against each other on their inner side walls when under load, 1-in. rear wheel spacers were fitted to locate the tires on centers 10½ in. apart.

The 6.6 to 1 rear-axle ratio, taken with an engine governor limiting the vehicle speed to 30 miles per hour, provided a truck with a safe running speed that was sufficiently high, and with adequate pulling power on hills. Another important specification included a speedometer drive gear adapter, not furnished by the Ford company, to compensate for the larger size rear tires and give a true speedometer mileage reading.

The 157-in.-wheelbase chassis was selected because, with a 10-in. frame extension, it permitted mounting a sufficiently large body to carry the maximum load allowed. The outside dimensions of the body are: 10 ft. 10 in. long; 6 ft. 2½ in. high and 6 ft. 0 in. wide. While the length and width were determined by the chassis specifications, the height was a compromise between a body too high for good appearance and one too low to prevent ease in loading and unloading operations.

The inside dimensions of the body are: length, 10 ft. 3 in.; height, 5 ft. 6 in.; width, 5 ft. 5 in. The difference between the inside and outside dimensions permits an insulation of 5 in. in the roof and 3 in. in the sides and ends, all of kapok, because of

lightness. Special floor construction utilizes a 2 in. slab of cork.

Structural members of the body are of steel to reduce the weight. The total weight of the body and equipment is approximately 2,380 lb. This, with a chassis and cab weight of 4,300 lb. and a maximum pay-load of 5,000 lb., gives a gross maximum weight of slightly under 12,000 lb.

The body was built by Fitzgibbon & Crisp, Inc., Trenton, N. J., and for refrigerating purposes is equipped with one of that company's Trenton Icefin units capable of carrying 150 lb. of water ice. The use of water ice as a refrigerant was decided upon because of its low cost, since the company manufactures its own ice; because of the relatively short 8- to 10-hour delivery routes; and because of the moderately high body temperature to be maintained.

The temperature of the goods as put into the bodies varies from 32 to 35 deg. F. A variation of 15 deg. to 50 deg. F. between the beginning and end of the route will keep the goods in excellent condition.

It is evident that under these conditions no refrigeration will be required when the outside weather temperature is 50 deg. F. or below. No expense for ice will be incurred. The only indirect expense will be the prorata initial capital cost of providing the body insulation and refrigeration unit for those periods when no refrigeration is required.

However, that expense is considered well justified because it insures the delivery of the goods in excellent condition at all times and therefore is a business-building sales asset. This insulation also provides for protection of the goods in zero weather. Fresh eggs delivered in cartons or cases cannot freeze and crack.

The ice is put into the refrigeration unit through the side door of the body on the right. A small electric blower fan run from the truck battery is located at the rear of the refrigeration unit. This fan is operated intermittently to circulate the cold air.

A thermometer is mounted on the inside of the body and protected against breakage, permitting the driver to determine the air temperature in the body at all times.

From 50 to 150 lb. of ice is required per day to maintain the body air temperature at not over 50 deg. F. The quantity required depends upon the outside weather temperature. Any ice remaining in the refrigeration unit at the end of the route is left in the unit overnight and less ice added the following morning. For ease in reading address labels inside the body without opening the doors wide, two dome lights are provided.

In outward appearance the new body has two important characteristics. These are the advertising value of the lettering and the clean outside surfaces obtained by the absence of the old-fashioned door hinges and door-locking mechanism. Piano door hinges are used on both side and rear doors in place of hasp-type hinges and the three-point door-locking mechanism is placed on the inside with only the chrome-plated handle on the outside. This avoids interference with the body lettering.

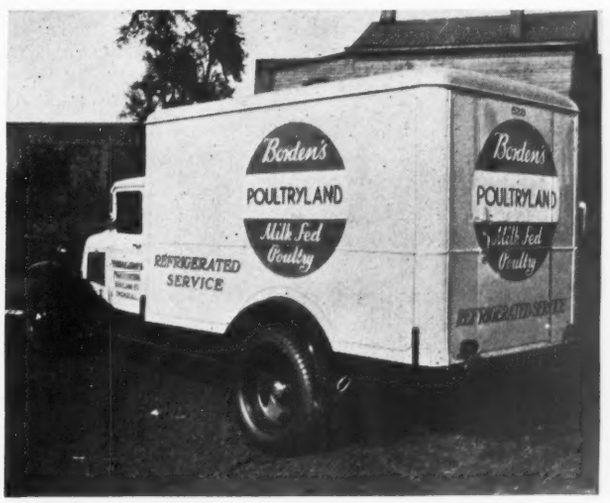
As shown in the accompanying illustrations, the Borden's Poultryland seal is reproduced in colors on both sides and the rear of the body. The word Borden's appears on the front of the body above the cab. This arrangement gives the fullest possible advertising value, for no matter from what angle the body is viewed, there can be no doubt that it is Borden's.

The make and number of the cream-colored paint used for the body proper; the red paint on the chassis and wheels; the black paint on the fenders, all enamels, and the aluminum paint on the body and cab roofs have all been specified so that no matter in what cities the vehicles are used and later repainted, they will always accord with Borden's layout.

The first two of the new units have gone into service in Chicago. The others will operate in Scranton, Philadelphia and New York City.

In justification for the multiplicity of details described in this article it is pointed out that each detail played an important part in the development of the finished vehicle. It is also pertinent to comment that body specifications are entirely up to the user of automotive vehicles, that executives of the purchasing companies are the ones who must determine what they need in the way of product protection and procure truck bodies that fulfill the requirements.

Front, rear and both right and left sides of the new standardized refrigerated body developed by the produce division of the Borden Sales Co., Inc., are shown in these two views. The vehicle is used for the retail delivery of butter, eggs and poultry from Borden's produce division branches throughout the United States. The body is mounted on a standard Ford V-8 chassis of 157-in. wheelbase with oversize tires permitting a maximum carrying capacity of 5,000 lb. Fitzgibbon & Crisp, Inc., Trenton, N. J., built the body, which is refrigerated by a wet ice and fan unit that maintains a body temperature between 35 and 50 deg. F. Other features of the chassis and body are outlined in the accompanying text.



Automotive FORUM

(((In Which Are Discussed Practical Automotive Transportation Problems in the Food . .

THIS MONTH'S QUESTION

QUESTION 3

Meat Delivery Bodies

1—What type of motor-truck body is the most desirable for the delivery of dressed meats to retail stores in cities?

2—Is the panel body better adapted to this work than the flareboard express type with a tarpaulin cover?

3—Is a refrigerated body necessary, and, if so, under what conditions?

Insulated Bodies Are Adequate For Short-Haul Work

FOR our delivery of pork and beef, we find the insulated panel-truck body the best. For long hauls, refrigeration is necessary. For short delivery service in the city, refrigeration is not necessary, as you would lose the refrigeration very rapidly when opening doors to make deliveries at stops which are not very far apart.—J. & F. SCHROTH PACKING CO., *Cincinnati, Ohio.*

Refrigerated Bodies Necessary

THE TYPE of motor-truck body which we have found most desirable is a panel refrigerated body. Though the panel body may not be as convenient as the flareboard express type, it protects the products from the dust and dirt of the streets and roads as well as from the weather elements. The drivers are not always as careful as they should be in using a tarpaulin cover. Furthermore, the tarpaulin soon becomes very dirty and is certainly far from sanitary.

While a refrigerated body may not be necessary under all conditions, it is certainly preferable, and permits the delivery of fresh meats in much better condition than otherwise, as it maintains the temperature at which the products are loaded, instead of the extreme temperatures experienced during the summer months.

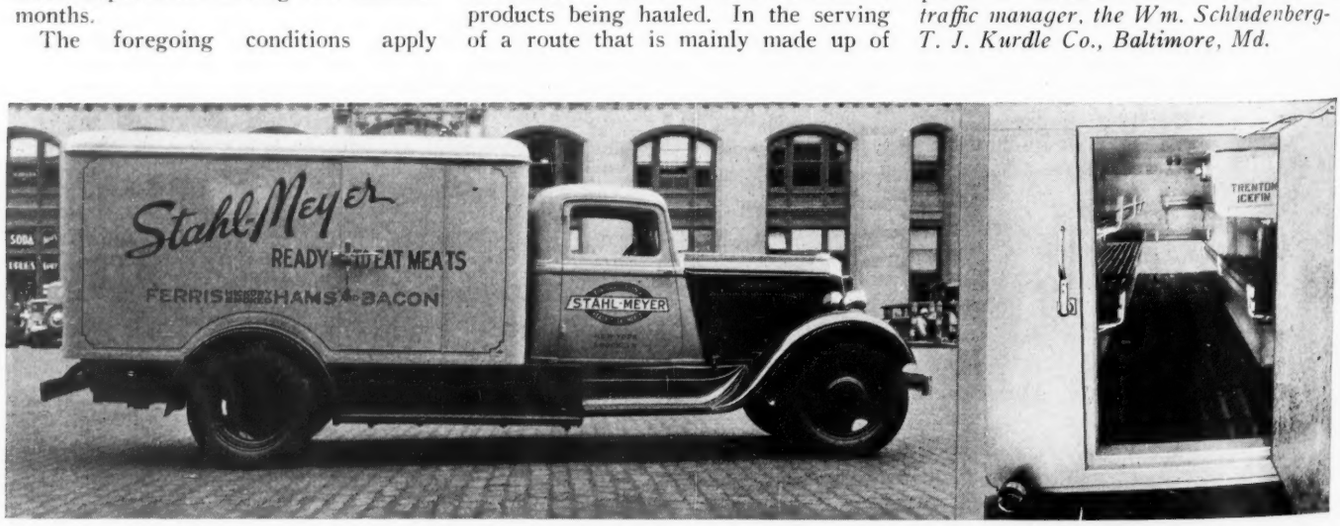
The foregoing conditions apply mainly during the late spring, summer and early fall months. Even in the winter, a panel body with the rear closed in is a far better unit than any other type of body for distributing meat and meat-food products.

It is a difficult matter to set up an average temperature in refrigerated truck bodies during delivery of fresh meats, as it depends very largely upon the nature of the route and the class of products being hauled. In the serving of a route that is mainly made up of small orders, the rise in temperature would be considerably less, because the doors of the truck would be open a considerably shorter time than in serving a route where the orders are larger and require the doors to be opened for longer periods in which to unload.

Furthermore, the average temperature is affected also by the nature of the products. By that I mean if the majority of the load consists of fresh meats loaded at a temperature of approximately 36 to 40 deg. (temperature of the meat), the temperature inside the truck will naturally be lower than if the majority of the load consisted of smoked, sweet-pickled and dry-salted meats together with lard and shortening, the temperature of which is considerably higher when loaded.

It seems to us that the individual companies will have to be guided largely by the nature of the products loaded, size of orders, and distance traveled, because there are hardly two routes or territories the same.

Our preference in the use of refrigerated bodies is for those using water ice with a blower type of unit for the distribution of cold air in the body. This is accomplished by a very small fan which is a part of the unit containing the ice and is not likely to get out of order very quickly. Dry ice is very good, but, at the same time, is costly and is not always available for re-icing purposes if needed.—H. E. WENNAGEL, *traffic manager, the Wm. Schludenberg-T. J. Kurdle Co., Baltimore, Md.*



One of a large fleet of 1½-ton Dodge Brothers trucks with refrigerated panel bodies used by Stahl-Meyer, Inc., New York, N. Y., for the delivery of ready-to-eat meats in the Metropolitan area. Each body has a rear door and one on the right side for sidewalk unloading. The bodies were made by Fitzgibbon & Crisp, Inc., Trenton, N. J., and each is refrigerated by means of the water-ice unit shown in the interior body view at the right. A small electric blower-type fan is incorporated in the wet-ice unit and is operated intermittently to circulate the cold air throughout the body.

Long Hauls Require Refrigeration

WE recommend a closed-type body for delivering meat to retail stores in cities. In our opinion, the panel-type is much better adapted to city delivery because of the sanitary features involved.

A refrigerated body is not necessary unless the deliveries require considerable time; in that event we would recommend refrigerated bodies.—M. B. CONE, *Major Brothers Packing Co., Mishawaka, Ind.*

Tarpaulins Under Some Conditions

FOR mixed loads of beef, pork, lamb and veal, the tarpaulin-cover type of truck seems to have proved the most practical. However, for package meat products and pork products, the panel body has been widely used because of its light construction.

Refrigerated bodies are not necessary for local deliveries, but where the elements of distance and considerable length of time of delivery enters, it is advisable to use the refrigerated-body type. This type is also used by route salesmen, both locally and on long hauls where products are carried for sale directly from the truck.—G. A. SCHMIDT, JR., *Stahl-Meyer, Inc., New York, N. Y.*

Conditions Determine Body Types

WE USE various types of motor-truck bodies for the delivery of dressed meats to retail stores in cities. The type depends upon local conditions, climate, etc. Both the panel body and the flareboard express type with a tarpaulin cover are needed.

We have no experience with refrigerated trucks. No doubt they are necessary under certain conditions. We do not use them because we do not make long-distance deliveries in our trucks. Where long-distance trucking is used, we deliver to express trucking lines. In cities we deliver all our products in non-refrigerated trucks, both of the panel and express types.—T.H.F., *John Morrell & Co., Ottumwa, Iowa.*

Panel Body More Sanitary

OUR experience leads us to believe that, for a general line of packing-house products, there is no one type of body that is suited to all requirements for delivery to retail stores in the city.

The panel body is better adapted to most work than the flareboard express type with a tarpaulin cover. However, there are certain types of delivery in which a panel body does not work to advantage and we have found that when the tarpaulin cover is supplemented by an insulated one of 1½ to 2 in. thickness of kapok covered with waterproof material on each side, the flareboard express type is made to operate much more satisfactorily.

We also find that a refrigerated body is not absolutely necessary for the delivery of packing-house products. We have found that insulated cabinets holding 600 to 700 lb. of meat products are much more desirable than a refrigerated body from the standpoint of economical operation and original cost. These cabinets are more flexible, in that they may be filled inside the insulated rooms, if so desired, and placed in the truck after being filled.—GUY MONAUGH, *secretary-treasurer, Sandusky Packing Co., Sandusky, Ohio.*

Well-proportioned refrigerated panel body mounted on Mack truck operated by the Wm. Schluderberg-T. J. Kurdle Co., Baltimore, Md., for the delivery of all classes of fresh meats and packing-house products. The gross weight of the vehicle is 25,000 lb. It has a pay-load capacity of 12,000 lb. The truck averages about 76 miles a day and delivers direct to stores and freight depots. The body was made by the Leonhardt Wagon Mfg. Co., Baltimore, Md., and has a capacity of 528 cu.ft. It is refrigerated by means of a wet ice and fan unit which maintains a body temperature of between 50 and 55 deg. F.

Prefers Panel Refrigerated Body

A PANEL-TYPE body is most desirable for city delivery of meat products—one which may have very near 6 ft. of height on the inside for ease in working, as well as increased pay-load.

A panel body is much better adapted for delivery work than an express type with a tarpaulin cover. Over a period of time, it is less expensive and it can be kept more sanitary.

A refrigerated body is necessary in country delivery. For city work, where the load is only out two or three hours, it isn't quite so necessary, because a low temperature could not be maintained when doors are open at five- or ten-minute intervals.—R. F. GRAY, *transportation department, George A. Hormel & Co., Austin, Minn.*

To our Automotive Readers:

Realizing the many and varied problems of motorized transportation which are constantly arising in the handling of all kinds of food products, the editor will be glad to receive suggestions as to what are the particularly pressing problems that readers would like to have discussed in these pages.

Prefer Insulated Closed Bodies

IT HAS BEEN our experience that the most desirable motor-truck body for delivery of dressed meats to retail stores is the insulated, closed body. We would prefer the panel body for this type of hauling to the flareboard express type using a tarpaulin cover.

A refrigerated body is not necessary on what we term as "city delivery," where delivery is made from one to four hours after the product has been loaded at the plant. The products hauled by these trucks are usually loaded at a reasonably cold temperature, and with a well-insulated body the temperature will hold the products in good condition until delivered.

However, on long hauls, a refrigerated truck is necessary, and personally we feel that there is room for improvement, and that before long someone will develop a satisfactory type of mechanical refrigeration, possibly operating from the truck motor, and in which the initial expenditure will be reasonable, so that the initial cost will not prohibit trucking companies from making the installation.—WM. J. MCMAHON, *superintendent, Wilson & Co., Inc., of Kansas, Kansas City, Kan.*

Getting California Fruits Into Foreign Markets

(Concluded from page 507)

phurous-acid solution, and stored at 80 deg. F. until refilled with the holding solution just before shipment, after which they were closed and sealed with paraffin.

Moorpark apricots were used because of the lateness of the season when the fruit was packed, and about 1 per cent of lime was added to harden the fruit. Prunes were packed and treated in the same way, although the addition of lime toughened the skin more than was desired. Kadota figs were packed in a solution containing 5,000 parts per million of sulphur dioxide, preliminary tests having shown the necessity for a high concentration to assure firm figs. Addition of even minute quantities of lime made the figs hard and unusable.

Results indicated that cooperating English companies were more familiar with handling fruit preserved in this way than were the Germans. Products from England and Germany differed greatly, probably because of requirements of the respective trades. English products were more like American jam and preserves than the German. Statements regarding flavor, appearance and texture in the accompanying table are based on American standards.

An English concern reported that jam made from apricots shipped in this way from California was equal to jam prepared from some of the best-quality apricots received in tins, though it was necessary to lighten the color by adding a little tartrazine.

Two German concerns asserted that the sulphurous acid masked the flavor of the fruit, a statement apparently resulting from their unfamiliarity with sulphur dioxide as a preservative. The flavor of all fruits preserved was masked until the sulphur dioxide was removed by boiling.

The skins of the prunes were found to be hard, probably because of the presence of lime. Even so, it was possible to make excellent jam with them.

One firm found the apricots too large. Smaller apricots could have been obtained, had the shipments been made earlier in the year. Also, if the large apricots had been passed through a coarse grinder, they would not have been difficult to use in jam.

As in the case of the whole peaches shipped in 1931, the German firms had difficulty in pitting the prunes. A tomato pulper would have done the work, and would have been more practicable than the hand method used.

The sulphur-dioxide content of the finished jams was reported to be over 40 and up to 80 parts per million, which was considered high. Experiments conducted at the Fruit Products Laboratory showed that the sulphur-dioxide content of the finished products was often over 80 parts per million. Control tests on the natural fruits indicated from 50 to 75 parts per million, so that in all instances the European products were practically free from sulphur dioxide, as shown in the accompanying table. It was also found at Berkeley that the sulphur dioxide was not easily removed unless the solutions were boiled alone for a time, after which the fruit and some water were added.

Jams and preserves were made by boiling the fruit with and without the holding solution. When the holding solution was not used, the sulphur-dioxide content was lower in many instances. However, when the holding solution was discarded, the flavor was extremely poor and, in the case of colored fruits, the color was weak. As the holding solution contained considerable pectin, when it was discarded the pectin also was discarded, so that the jams were rubbery, like the German products. The lack of flavor and the rubbery texture of the German products indicated that the holding solutions, which contained important dissolved materials, were not used.

The table includes the results of the examination of the finished products made in Europe and at Berkeley. It indicates that the preserves made from fruit stored in sulphurous acid were not desirable. The jams, however, were of excellent quality, when the holding solution was used and proper procedure followed in preparation.

Canned figs and prune preserves prepared from fruit stored in sulphurous acid retained enough sulphur to cause the cans to discolor and swell in a short period of time. In some cases, undesirable odors were formed.

At present, additional experiments are being conducted on holding fruit in sulphur-dioxide solution for future use by a California jam manufacturer. This company has successfully held plums, apricots, strawberries, blackberries and currants in sulphur dioxide for use during the winter packing season.

Making Beer Not What It Used to Be

(Concluded from page 489)

tion and in the general apparatus of the brewhouse, fermenting room and stock house. It is true that greater electrification and more individual electric drives may be found about the plants and that wooden vats and casks are found less frequently. In some of the plants built within the last two years one occasionally finds installed such newly developed equipment as the unit cooler for cellar cooling. It contains an electrically operated fan and a fin-shaped direct-expansion ammonia radiator, which combination makes a satisfactory and economical device; it eliminates the customary, but old-fashioned, expansion coils in the fermenting and storage cellars with their annoying and unsanitary dripping of moisture.

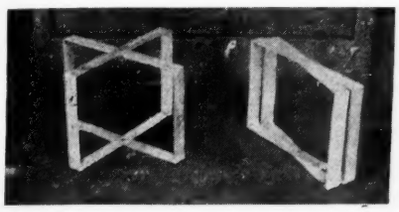
Great scarcity prevailed in the supply of good kegs (and barrels) when beer was legalized last year. The shortage of wooden kegs induced the manufacturers of various metal containers to produce metal beer barrels. Reinforced tin cans and steel drums —both insulated and non-insulated— were tried by brewers. Protective coatings of every description were applied. Plain steel, galvanized or tinned iron, stainless steel, aluminum, and almost every imaginable metal in rolled, stamped, and sometimes cast state, were employed. Certain breweries have acquired large quantities of metal barrels, but restaurant owners, as well as the public, especially in the eastern part of the United States, have been reluctant in their acceptance of this new shipping package for beer. Only through years of experience will anyone be able to decide whether the advantages of an improved metal beer barrel outweigh its disadvantages.

IDEAS . . . FROM PRACTICAL MEN

Delivering Ice-Cream Cake

Delicate products such as ice-cream cake are difficult to deliver in good condition. Packing often tells the story of success or failure, and, in this connection, the packing protector shown in the accompanying illustration has been developed by C. Butler, shipping foreman for Hage's, Ltd.

Two of these protectors are shown, one open, the other closed. The method of use is as follows: The cake is set on a metal disk, which is then slipped into the protector, which is then closed. In the closed position,



the X above the cake, made by the two parts of the protector, is a convenient handle by which the cake can be lifted and lowered into the packer. Brine pads are used above and below the cake. The cake can be removed by the same method, in perfect order.

Protector frames are made of 16-gage galvanized sheet iron, cut in strips 1 in. wide and in lengths to give any size of finished protector desired. Top and bottom hinge pins are $\frac{3}{16}$-in. flat-head rivets.

How to Prevent Corrosion

Refrigerating pipe work suffers from corrosion where the metal is partly wet and partly dry, as may occur where brine splashes or where its level varies. Pipe can be protected from the splashing brine by a covering of bitumastic paint and canvas, the canvas being applied over the wet paint. Where pipe submerges into brine, protection against corrosion resulting from variance in the level will be afforded by a sleeve of lead about 2 in. long and $\frac{1}{8}$ in. thick. This sleeve is slipped on over the end of the pipe and tightly compressed in place by swages, the pipe first being well cleaned and coated with bitumastic paint.

When inspection reveals pits in refrigerating pipe, these should be cleaned and painted with a paste of water and red lead. If the pits are deep, the defective sections of pipe should be cut out and new ones welded in place. This will avoid replacement of the entire system.

W. E. WARNER, *Welwyn Garden City, Herts, England*

HAVE YOU ANY KINKS?

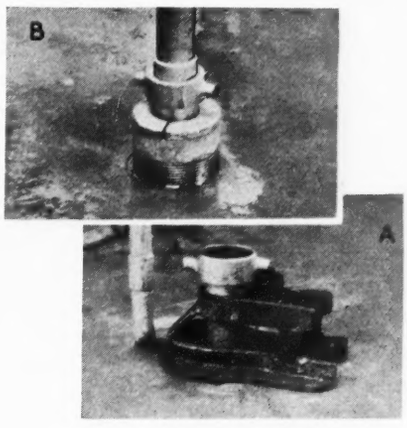
Practical ideas that help or save in plant operation wanted for this page. FOOD INDUSTRIES will pay $3 for each idea used. Send photos or drawings with your kinks.

Sanitary Pipe Supports

When liquid ingredients such as milk or chocolate syrup are to be raised or lowered between floors by means of a pipe passing through a pipe opening in the floor, it is necessary to support the upright piece at a definite height, in order to insure good connections and prevent loss.

One type of support found useful for this purpose is shown at *A*. It is made from a 1x1x$\frac{3}{16}$-in. angle iron, bent into a long U shape and welded to another U-shaped piece made from a $\frac{3}{16}$x1-in. bar. This latter is spaced 2 in. above the angle by means of three pieces of $\frac{3}{16}$x1-in. iron. A pin in the upper U holds the pipe in the support under the union and suspends it in the floor opening for connecting at both ends.

Another type of support is shown at *B*. This is made of lead, molded in a pipe with inside diameter equal to outside diameter of the floor pipe, with a pin in the center equal to the sanitary line under the union. After molding, this lead support is turned to a shoulder and sawed in half. In use, this is inserted in the floor pipe and supports a connecting length between floors by means of the union.

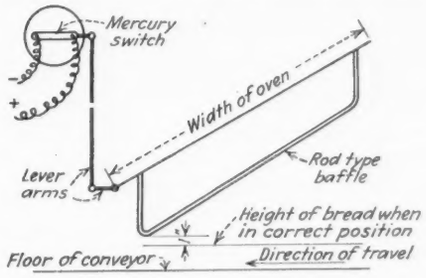


BILLIE BURGAN, *San Diego, Calif.*

Telltale for Traveling Oven

When a jam of bread pans occurs in a traveling oven, often the first warning is too late. Damage has already occurred.

The trouble is caused by the slow piling up of pans upon each other until the pans, not to speak of the bread, conveyor plates, heating equipment and even the driving equipment, are damaged. Sometimes such a jam will even break through the roof of the oven. In some cases, ovens have been



put out of commission for extended periods, with accompanying expensive repairs and disruption of the baking routine.

To avoid such serious troubles, install, at three or four points in the oven, hanging baffle plates, horizontal rods, or a series of vertical rods. The lowest joint of these telltales should be an inch or so above the normal level of the bread in the pans. Then, when a pan is displaced from its correct position on the conveyor plates, it shortly hits against one of these telltales, causing it to rotate and giving a warning, or, if desired, stopping the conveyor.

The method of giving the alarm is by providing a small lever arm at the end of the rod, and so connecting it through a linkage that it actuates an electrical contact when moved. A tilting mercury switch is a convenient contact for this purpose.

JOSEPH COFFIN,
Director, General Baking Co., New York City

KEEPING UP WITH THE FIELD . . .

- *Trade troubles taken up at four big meetings*
- *Label fight almost reaches name-calling stage*
- *NRA brokerage order starts backstage battle*
- *Pickle code approved, changes made in others*
- *Margins of dairymen found to differ greatly*

Self-Reliance Permeates Meetings Of Dairy Industries in Cleveland

Strikingly reminiscent of more prosperous days was the scene in Cleveland during the week of Oct. 17, when the dairy industries and dairy equipment manufacturers held their annual conventions and exhibits. Attendance was huge, and the exhibits numbered 251, which indicates that the equipment show was probably the largest in the country, if not in the world in 1934.

Self-reliance was the "tone" of the convention. There were no pessimistic remarks by the dairymen regarding the state of their own businesses. And many exhibitors reported an unusual number of actual sales from the floor, while a great many more received inquiries in far greater abundance than since the depression began.

However, everything is not rosy in the dairy field. Although ice cream sales are up 19.4 per cent over 1933, O. E. Reed, chief of the Bureau of Dairy Industry, reported that milk and its products have suffered a noticeable decline in per capita consumption. He estimated that an increase in consumption amounting to 34 lb. per capita would relieve the agricultural problem and restore that balance between the dairy farmer and the urban consumer which might be called prosperity. He urged the dairy industries to keep their quality at the highest possible level to guard against further decrease in consumption.

Competition from other foods has genuinely alarmed the sales managers of the ice cream industry, who have seen many prospective sales to children lost to candy and soft drinks. A definite defensive move, now under way, is to advertise ice cream as a food product in addition to the usual brand-name advertising.

The New Deal came in for some very heavy criticism in both conventions, despite the plea of President G. G. Kindervater to be less critical of the administration. Charles F. Whiting, of Boston, told the milk dealers that the government had plunged the milk industry into the most turbulent period in its history by failing to carry out its promised program of stabilization.

Berne A. Pryke, agricultural adviser to Sheffield Farms Co. and former New York Commissioner of Agriculture, cited six business fears: uncertain monetary policies, unbalanced budgets, business costs mounting faster than buying power, expanding bureaucracy, entry of government into the field of private industry and lack of a clear-cut attitude in Washington toward the profit system. Declaring that in effect there is a clear tendency toward compulsory collectivism, James A. Emery, general counsel for National Association of Manufacturers, ripped the hide off the administration and drew a big hand.

G. G. KINDERVATER
Reelected president of ice cream group

Need for renewed confidence in the future, a balanced federal budget, and abandonment of the idea of detailed supervision of private industry from Washington were called for in formal resolutions passed by the ice cream makers.

G. G. Kindervater of the Borden subsidiary known as Pioneer Ice Cream Brands, was reelected president of International Association of Ice Cream Manufacturers.

The International Association of Milk Dealers elected as officers for the coming year: President, Milton W. Hult, Davenport, Iowa; vice-president, R. C. Fisher, Worden Dairy Co., Waterbury, Conn.; treasurer, D. B. Peck, Chicago; and secretary, R. E. Little.

The 1934 exposition is the first to be held since 1932. In the intervening two years a great many new and interesting developments have taken place. Tinned copper, once the principal material of dairy equipment, has nearly passed out of the picture. In its place is now seen the harder, more enduring, better looking, group of metals consisting chiefly of stainless steel (18-8), Inconel, Monel, aluminum and the familiar glass-lined steel.

There was much interest in the various methods of putting vitamins into milk. Vitamin A (pro-vitamin A—carotene) was on display in pure form by SMA Co. for use in bringing winter milk up to the summer standard in vitamin A. It improves the cream color at the same time. Vitamins B and G (B_1 and B_2) from yeast were exhibited as a syrup for a chocolate drink called "Stillicious" by Chocolate Products Co. A vitamin D concentrate, Sun-A-Sured, was shown by American Research Products Co., and vitamins A and D in combination were displayed as standardized, deodorized concentrates by both National Oil Products Co. and Health Products Co.

There also were to be seen many irradiators for vitaminizing milk. Creamery Package offered a one-half size unit of its standard machine. Cherry-Burrell exhibited a new unit which irradiates an unsupported falling film of milk, passing the rays through a similar film of water. The latter acts as a chimney and takes away any fumes and ozone from the carbon arc.

A third type of irradiator was shown by Research & Irradiation Equipment Corp. In this unit, the source of ultraviolet is a modification of the Geissler tube. It produces no ozone. Hanovia Chemical & Mfg. Co. had on exhibit an irradiator using a mercury arc.

A modified rotary pump (the Bump) capable of building up pressures high enough for use in homogenizing, was shown by the Waukesha Foundry Co. A vacuum sterilizer for cream was this year's offering by C. E. Rogers Co. The apparatus heats cream to 300 deg. F. and sprays it into a high vacuum. De Laval Separator Co. showed a new type of separator, the "Air tight," into the design of which the principles of colloid chemistry have been carefully introduced. Its purpose is to produce cream of a better viscosity to avoid cream plugs and a skim-milk layer at the bottom of a bottle of cream.

At last the substitute for wood has been discovered for fabricating butter churns. The Challenge churn offered by Jensen Creamery Machine Co. is made entirely of aluminum. Butter has a tendency to stick to metals, but C. L. Mitchell, of the Challenge Cream and Butter Association, Los Angeles, dis-

MILTON W. HULT
Named head of Milk Dealers

covered that rough castings of most metals will take up a water film when they are thoroughly clean. On metals as on wood, a water film is what it takes to prevent the butter from sticking.

Vogt Process Industries had a crowd at its booth all the time to inspect its new compact individual-service-bulk-ice-cream machine. No part of this machine need be operated in the hardening room.

In the field of motor transportation, great interest was exhibited in large tank trucks offered by White Motor Co., Mack Truck Co., Autocar Co. and General Motors. These trucks are all designed to conform with the legislation that limits overall length of vehicles on highways.

An unusual number of refrigerated body trucks of all makes were on display. One mechanical refrigeration unit embodied an electrically driven compressor mounted beneath the truck body and powered by a generator driven by the engine.

At a time when the frozen novelties sales problem appeared to be on the wane, there was considerable evidence at the exposition to the effect that new novelties are being offered in such numbers as to revive the problem.

Dairy Operating Margins Vary Widely in 50 Cities

Among 50 metropolitan markets, distributors' gross operating margins on retail milk delivered to the home range from 4.41c. per quart to 8.34c. And retail prices vary from 9 to 15c. a quart. These figures are revealed in a review of important markets compiled by A.A.A.

Of the 50 markets, 21 are under federal license, one has joint State and federal control, fourteen are regulated by State authorities and another fourteen are without regulation. The federally controlled markets appear to have no smaller spread than the others. While it is true that none of the five in the highest bracket, from 7 to 8c., is federally controlled, there are six in the group ranging from 6 to 7c. In the latter group, too, are four markets under State control and four without official price supervision.

Of the 50 cities listed, Chicago has the lowest margin, while Raleigh, N. C., is highest. Miami is second highest with 7.95c., and Birmingham is third with 7.76c.

AAA Upheld on Two Counts

A.A.A. legal lights are doing a lot of exulting over two favorable court decisions upholding the constitutionality of the farm act and the sugar control amendment. Federal Judge Elisha H. Brewster at Boston, Mass., upheld the A.A.A. in the first test of its constitutionality when he refused to declare that the law placed taxing power in the hands of an administrative official.

Hawaiian sugar producers lost their fight to invalidate the Jones-Costigan sugar amendment when Justice Jennings Bailey of the District of Columbia Supreme Court ruled that the sugar law was constitutional and that rules and regulations drafted under it by the Secretary of Agriculture were proper methods of enforcing it.

Riley Fights Brokerage Payment; Gets Nowhere

A vigorous fight for repeal of the N.R.A. order permitting legitimate cooperative organizations to collect brokerage payments is being waged behind scenes at the Recovery Administration by Armin Riley, food code division chief.

Under an order instigated by Seth Thomas and approved Oct. 12, N.R.A. provided that no code provisions could be interpreted to prohibit the payment of brokerage commission to a bona fide cooperative for services for which brokerage might properly be paid to any organization or person.

Mr. Riley, who has presided at the making of the master grocery code and fifteen other related grocery manufacturing and distributing codes banning such discounts, opposed the action when it was suggested to him before approval. However, the cooperative leaders went over his head.

When Mr. Riley learned that the order had been issued, he came out fighting, but so far has had no success. Indications are that the order will stand.

Bakers Discuss Consumption Drop, Code, Other Troubles at Chicago

Nearly a thousand bakers from all over the country got together in Chicago, Oct. 22-25, at the industry's annual convention. Held under the direction of American Bakers' Association, the meeting gave the bakers a chance to learn where their industry stands, where it is headed, and why.

At this convention, strictly a business meeting, there was in evidence concern over declining bread consumption and anxiety over difficulties of enforcing the code effectively. There was the attitude, however, that by pulling together the bakers could handle all their problems successfully.

L. J. Schumaker, chairman of the association, said the industry was on its way out of the depression, but that it was a longer journey than had been expected.

Henry Stude, president, asked the trade to support the code, abandon any hope of a return to old conditions and prepare for the new order ahead. He urged the industry to search for methods of preventing destructive price cutting without "price fixing." In discussing the business outlook, he told the bakers that there is overcapacity and underconsumption, and that there is not room enough in this country for all the men who are in the bakery business.

The future of the industry, he said, is tied up with the future of N.R.A., which is certain to become a definite part of American economic life. He predicted that labor provisions would be made more comprehensive and more effective and that some form of unemployment insurance will be added. As to trade-practice provisions, Mr. Stude expects fewer of them, that their enforcement will be handed back to the industry and that their effectiveness will be much less than some now want. He also forecast a decentralization of industry.

HENRY STUDE
Continues as president of A.B.A.

Referring to the nature of the baking code, Mr. Stude remarked: "It is rated by impartial observers as a pretty good code." And he says it has eliminated discounts, premiums and rebates.

Armin W. Riley, food code administrator, was on hand. Admitting that results from the bakers' code had not

reached full expectations, he said the pact had accomplished much and that N.R.A. is studying code compliance intensively with a view to making improvements.

Gerard R. Williams, Williams Baking Co., Scranton, Pa., addressing the session devoted to American Society of Bakery Engineers, berated his industry for the race to see who could make loaves the longest and slices the thinnest. Thin slicing, he and other speakers pointed out, has contributed to the decrease in consumption. He also criticized the industry, and individual bakers, for having done little or nothing to offset advertising done by manufacturers of competing foods. Bread, he pointed out, is now a filler to be eaten mechanically and is easily overlooked or forgotten. This, he said, makes it imperative that bakers make a full-flavored, quality product. To get volume in bakery products today, Mr. Williams told the convention, the consumer must be given variety. While many new products may fail and have to be dropped, others will catch on and build sales.

Geo. M. Gottfried indirectly told the bakers they were too susceptible to trick sales methods, mentioning slicing and transparent cellulose wrapping as boomerang innovations. Slicing, he said, decreased consumption, while the new wrapping cut profits because the price of the bread didn't cover the additional cost. He recommended that bakers cut down the length of their pan and make slices a little wider.

The association reelected L. J. Schumaker chairman and Henry Stude president.

What Higher Freight Rates Would Cost Food Trades

Food raw materials and processed food products would pay a comparatively small proportion of the increased freight bill proposed by the railroads. The total increase in revenues which the increases in rates is expected to produce totals $170,000,000. Agricultural products would contribute $18,790,000. The railroads estimate that the increases in rates on manufactured foodstuffs would increase their revenues as follows:

Canned food, an increase in average revenue per 100 lb. of 2.5c for a total of $1,654,000; beverages, 3c per 100 lb., $702,000; sugar, 1.5c per 100 lb., $1,077,000; table syrups and molasses, 2c per 100 lb., $250,000; vegetable oils, except linseed, 3c per 100 lb., $708,000; cheese, 6c per 100 lb., $209,000; butter, 8c, $929,000; butterine and margarine, 6c, $16,000; edible packinghouse products, not including canned meats, 4c, $793,000; cured, dried or smoked meats, 5c, $579,000.

Hearings on the railroads' petition are still in progress, with no prospect of a decision before January.

CONVENTIONS

NOVEMBER

12-14—National Cooperative Milk Producers' Federation, Onondaga Hotel, Syracuse, N. Y. Charles W. Holman, 1731 Eye St., N.W., Washington, D. C., secretary.
12-16—American Bottlers of Carbonated Beverages, annual meeting and exposition, 106th Armory, Buffalo, N. Y. I. M. Oberfelder, 726 Bond Building, Washington, D. C., chairman of executive committee.
20-22—Southern Association of Ice Cream Manufacturers, annual meeting, Atlanta, Ga. John R. Kinnett, secretary.
20-22—Associated Grocery Manufacturers of America, annual, Waldorf-Astoria Hotel, New York. Paul S. Willis, 205 E. 42d St., New York, president.

DECEMBER

4—American Association of Creamery Butter Manufacturers, annual, Palmer House, Chicago. W. F. Jensen, 110 N. Franklin St., Chicago, secretary.
5-7—American Society of Refrigerating Engineers, Hotel New Yorker, New York. David L. Fisk, 37 West 39th St., New York, secretary.
17-19—American Honey Institute, annual meeting and exhibit, Valdosta, Ga. Malitta F. Jensen, Commercial State Bank Building, Madison, Wis., secretary.
——Flavoring Extract Manufacturers Association of the United States, annual. E. L. Brendlinger, Dill Co., Norristown, Pa., secretary.

Vitamin D a Dental Aid

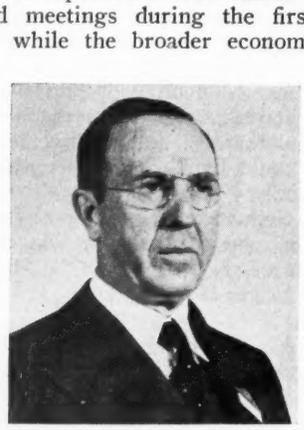
That vitamin D helps to protect teeth from decay is borne out by studies recently completed by E. C. McBeath, M.D., D.D.S., of Columbia University. Child-feeding experiments were carried on for six months, and it was found that the carious surfaces of the teeth of the children on a regular diet had increased from 55 to 84 per cent, while those who had taken 300 units of vitamin D daily had an increase of 10 to 18 per cent.

One License Tag Enough

Truck fleet operators cannot be compelled by a State to buy licenses of that State for trucks which occasionally enter the State but which are operated in connection with stores in other States, according to court decision in favor of Kroger Grocery & Baking Co., Cincinnati. Kroger has won a temporary injunction against highway officials of Ohio and Hamilton County in a suit involving this principle. The company's drivers had been threatened with arrest unless Ohio license tags were provided for its Indiana, Pennsylvania and West Virginia motor vehicles which at times enter Ohio.

Economic Readjustment and Sales Concern Packers at Convention

In a convention that set an all-time record for attendance with well over 1,000, members of Institute of American Meat Packers discussed the problems of their business in Chicago, Oct. 12-16. Practical operations were taken up in closed meetings during the first two days, while the broader economic aspects of the industry were on the program of the open meetings of the last two days. Nor were these sessions everything. The packers found much of interest in the 41 exhibits of equipment and supplies at the exposition.



FRANK A. HUNTER
Elected chairman of packers' group

Their surplus of supplies wiped out by the drought, the packers were in an optimistic mood. But they were concerned over the task of adjusting operations to supplies and also with the need of improving merchandising methods.

G. B. Thorne, Agricultural Adjustment Administration, analyzing the results of government relief purchases, explained that the reduction in the productivity of cattle herds will not be as marked as the figures indicate. During the last several years of declining prices, he said, there has been an accumulation of old, and to some extent, inferior beef and dairy breeding stock, and the farmers, in selling to the government, have tended to sell this old stock and retain their better cattle.

The total number of cattle and calves on Jan. 1 likely will not be more than 57,000,000 head, a reduction of 10,000,000 in the last year, while the number of hogs probably will be smaller than a year ago by 14,000,000 head, according to William Whitfield Woods, president of the institute. Nevertheless, he contended, supplies will be adequate.

Chester C. Davis, A.A.A. administrator, who addressed the packers, pointed out that in the past year and a half the farm problem has changed from that of removing surpluses to that of maintaining balanced production. Mr. Davis also took advantage of the occasion to do a little boosting for the A.A.A. amendments which will come up again in the next Congress, disclaiming

any dictatorial aspirations on the part of the Administration.

Repeal came in for a little praise when W. H. Gausselin, chairman of the sausage division, said that the quantity of sausage moved into consumption as a complement of beverages during the summer was a great deal larger than in any recent year.

On the subject of merchandising, a number of speakers stressed the need for improvement. Stephen A. Douglas, Kroger Grocery & Baking Co., said that his company had had surprising success with modern sales methods. He also pointed to the increasing volume of canned meats, fresh and frozen fish and oysters, and predicted that rabbits some day will establish a foothold as a meat industry. According to L. M. Hoagland, chairman of the committee on distribution methods, "better selling is not only our present greatest need; it is our ever greatest need."

Frank A. Hunter, Hunter Packing Co., East St. Louis, Ill., was elected chairman of the institute to succeed John W. Rath. Mr. Woods was again named president. The sausage division selected George A. Schmidt, Stahl-Meyer, Inc., New York, as chairman.

Canners and N.R.A. Reach Impasse on Labels

Deadlocked in the fight over labels, the canning industry and N.R.A.'s consumer advisory board have reached the stage where they are referring to each other in strong terms closely akin to names. The board, having rejected the canners' plan for descriptive labeling, still insists on alphabetical grades. The canners call the tactics of the board "bureaucratic harassment" and pledge themselves to resist in every practical way the "ruination of the industry's business" by having thrust upon it unsound ideas of theorists who have nothing at stake except pride of opinion.

When told that the N.R.A. intended to push A, B, C labeling, the canners answered that the only way that kind of labeling will get into the canners' code is by executive order, and they are not afraid of that. Meanwhile, the canners are going ahead with plans for descriptive labeling. E. S. Thorne, president of National Canners' Association, has appointed as an association committee the industry labeling committee which officially went out of existence when its report was submitted.

White-Top Trucks Cooler

"How many degrees cooler would the inside of a truck body be if the outside and roof were painted white or aluminum, as against black or other dark colors?" This question, raised by truck-fleet operators, is answered by E. I. du Pont de Nemours & Co. White, in general, produces a temperature about 8 deg. F. lower than black or any dark-colored finish. Other light colors, such as aluminum and yellow, are practically as effective as white.

GEORGE A. SCHMIDT
Heads sausage makers organization

HORS D'OEUVRES

HOGS are being shipped from a test territory in Kansas in lots of one or more with the buyers' addresses painted right on their sides. About as effective as putting the pig in a poke.

•

A FLOATING BREWERY will carry beer to the sourdoughs of Alaska, the plan being to bottle and barrel the beer en route. A novel way to take suds over the foam.

•

A BREWERY in Illinois offers $500 for the best letter on why aging in caves produces better beer. Probably it's because a brewery that goes to all the trouble of putting the beer in a cave will leave it there for a few weeks.

•

SO MANY PREPARATIONS are being put on the market for making ice cream at home that one wonders why the ice cream manufacturers don't dispense with expensive freezers and hardening rooms and just sell the mix.

•

BIG HE-MEN steel workers have taken to eating gum drops. Consumed during the hot summer months, the drops supply glucose for additional energy. Salt tablets, taken at the same time, replace the saline fluid lost in perspiration.

•

MAE WEST was mentioned at the recent meeting of the food section of National Safety Council as a boon to the food industry. But why praise dangerous curves at a safety meeting?

•

MATÉ TEA is under consideration as an addition to army rations. Does the army intend to quit fighting and go in for afternoon parties?

Relief Buying Tapers Off; Year's Total Enormous

Expected to reach a total of approximately 7,737,000 head and an expenditure of $103,000,000, relief cattle purchases by the government are just about closed. Starting late in September, buying was limited to the most distressed areas and to producers definitely unable to feed the stock.

From the $10,000,000 set aside for purchase of sheep in drought areas, over 2,000,000 ewes at an average of about $2 per head have been purchased. Butter and cheese purchases will continue throughout the winter as demands are made by State relief agencies, but no estimate of the total to be bought is available.

A compilation of relief activities during the past year, recently released by the Federal Surplus Relief Corp., shows that 692,228,724 lb. of foodstuffs, not including 3,489,724 head of cattle, 194,679 bags of citrus fruits and 427,090 gal. of syrups, was shipped for relief during the year ended Sept. 30, 1934.

The foodstuffs included 295,978,865 lb. of pork, 117,202,375 lb. of canned beef, 23,876,730 lb. of lard, 56,597,380 lb. of butter, 6,021,702 lb. of cheese, 144,468,076 lb. of flour, 20,292,291 lb. of cereals, 6,872,000 lb. of beans and 885,350 lb. of dried apples.

Other food products were 790,000 lb. of cornmeal, 768,000 lb. of salmon, 128,000 lb. of cocoa, 361,750 lb. of sausage, 790,004 lb. of condensed milk, 10,526,851 lb. of fresh veal, 3,508,000 lb. of fresh beef and 3,160,100 lb. of boneless beef.

These astounding totals do not include heavy purchases of potatoes and other fresh vegetables and heavy canning operations of fruits and vegetables in some States.

Strikes Ended; Labor Board Acts Against Bakery

Two strikes in food plants have been settled recently, and labor boards have acted in two other labor cases. The strikes terminated were at Columbus (Ohio) Packing Co. and Jaeger Baking Co., Milwaukee. At the Columbus plant, labor and management got together in a three months' agreement. In the Jaeger bakery, officials granted a 10-per-cent wage increase, allowed time and one-half for overtime and recognized the union. The latter strike had been in effect since July 21.

National Labor Relations Board on Oct. 5 announced its decision in the case of Gordon Baking Co., Detroit, which was brought up for reconsideration. The complaint was failure to bargain collectively, and the decision held that the plant in question was an appropriate unit for collective bargaining but that the union had not established failure on the part of the company to bargain. In a report on Oct. 14, the New York regional labor board charged Ward Baking Co. with violation of Sec. 7(a) of the National Industrial Recov-

ery Act for discharging six employees because of union activities. The board recommended that the N.L.R.B. make the company comply with the baking industry code.

Sugar Institute Enjoined But Not Dissolved

While certain activities of Sugar Institute, Inc., were illegal and are henceforth enjoined, it has done some good for the sugar industry and it need not be dissolved. That, in effect, was the final ruling of Federal Judge Julian W. Mack on Oct. 9, a decree which terminates long-drawn and expensive litigation that began on Feb. 9, 1932.

Judge Mack concluded that the fifteen corporate members of the institute "have engaged in an unlawful combination and conspiracy which has unduly and unreasonably restrained trade." He ruled, however, that the "concerted activities in the adoption of a master tariff and in an improved scale of raw sugar polarization allowances were fair, reasonable and justified . . . and should not be restrained."

AACC Sections Active

Local sections of the American Association of Cereal Chemists, always active during the winter, have begun their 1934-35 program of trade problem discussions. At a meeting Oct. 9, the New York section judged bread and heard a talk on new developments in starch chemistry. Another meeting, with vitamins as the feature attraction, will be held Nov. 13. The Niagara Frontier section, the Midwest section and others also are active.

The A.A.C.C. recently called together brewers and malting chemists of the Chicago area to organize the work of a committee on standardization for methods of brewing and malting control.

Second-Hand Egg Cartons Shown To Be Costly

It doesn't pay to re-use cartons for packaging eggs. That is what S. S. Wurtzel, National Poultry and Dairy Package Improvement Bureau, pointed out in an address at the annual convention of National Poultry, Butter and Egg Association in Chicago, Oct. 7-9. Rings of dirt and grime too often appear at the point where the eggs rest on dirty flats, Mr. Wurtzel said, and these are responsible for a loss of from $1 to $1.50 per case to the shipper.

And another feature of the egg-packing problem which cannot be overlooked is breakage, Mr. Wurtzel explained, giving figures to show that Pacific Egg Producers, who pack only in new materials, sustained a loss of only 50 cents per car over a six-year period, while the average loss in rail shipments ranged from $3.39 to $7.04.

Used packing also degrades quality, according to Mr. Wurtzel. Studies cited by him revealed that eggs packed in second-hand material scored, on a basis of flavor, only 59, while the same eggs packed in new materials under identical conditions scored 84 to 85.

Brewers Convene for First Time Since Prohibition; Ask Lower Tax

In the first full turnout of the brewing industry in fifteen years, master brewers and their bosses, the brewery owners, met in separate conventions in New York the week of Oct. 7. The members of Master Brewers' Association of America held their serious sessions (see page 489) early in the convention and spent the remainder of their time in social activities and sight-seeing tours. Delegates to the convention of United States Brewers' Association stuck to a more rigorous program which covered taxation, group advertising, merchandising and other problems.

In addition to the two conventions, there was an exposition which the brewers attended to see what was new in equipment for their industry.

Col. Jacob Ruppert, president of United States Brewers' Association and grand old man of the brewing industry, discussed the beer tax, saying that the sale of beer will not reach the barrelage possible until a reduction of the tax makes possible the five-cent glass. As to the code of the industry, he credited it with elimination of problems burdensome to brewers before prohibition, such as destructive prices.

JACOB RUPPERT
Brewers beg him to remain leader

At a banquet at which the speakers' table was graced by such personages as Alfred E. Smith and Postmaster General James A. Farley, a pledge to fight in Congress for a $3 a barrel tax on beer was made by Congresswoman Mary T. Norton of New Jersey.

Even with the present tax, production of beer is expected to be 72 per cent larger in 1934 than last year, according to a report by C. D. Williams, secretary of United States Brewers' Association. The number of breweries has increased from 578 at the end of 1933 to 700 at the end of this August, total capitalization being estimated at about $230,000,000. The industry is climbing slowly but surely out of the depression, Mr. Williams thinks.

The brewers were pleased by results of a survey in which the question "Are you now making home brew?" was answered in the negative by twelve families for every family that answered in the affirmative.

A report was made by Fred Mills, director of the market study commission, in which he said that beer was a "natural" for cooperative advertising, but that the industry was not now in a condition to conduct such a campaign.

A definite attempt should be made to sell beer to women, in the opinion of Christine Frederick, author of *Selling Mrs. Consumer,* who addressed the brewers. She advised the industry to make plain the effect of beer on the physical appearance of women and to package it in more attractive containers.

At the close of the convention, the brewers adopted a resolution to press their fight for a lower federal tax.

The group reelected all of its officers, overruling Col. Ruppert's expressed desire to retire from the presidency. Other officers are R. A. Huber and Edward Landsberg, vice-presidents; William C. Krueger, treasurer, and C. D. Williams, secretary.

To Reintroduce Food Bill Minus Concessions

The food and drug bill will be promptly reintroduced by Senator Copeland when the next Congress convenes in January. The Department of Agriculture was generally pleased with the Senator's management of the bill last session, but is preparing to fight against concessions made at that time to push the bill along. The department is believed to be well satisfied with the bill in its present form, but it would be strange indeed if it were to abandon now the fight for descriptive labeling and other features of the bill that were modified in the Senate committee. The flood of rival bills is put down as an attempt to confuse issues, excepting only legislation proposed by Consumers' Research, which is regarded as a sincere but thoroughly impractical proposal.

ALL IN A DAY'S WORK

Sampling beer is an old story to this quartet. It's their job. They are four master brewers who attended the convention in New York. Left to right, they are: John Russert, secretary of Master Brewers' Association of America; Frank P. Van de Westelaken, president of the association; Henry E. Kayan, second vice-president; and John Scheuhle, delegate from Baltimore.

To Court Industry's Favor For AAA Amendments

A.A.A. will reintroduce its "farm dictatorship" amendments in the coming Congress, and Chester Davis, A.A.A. Administrator, has been selected to gain support for them, or at least lull opposition, through conferences with processors, shippers and brokers.

Whether the amendments have been changed from the originals submitted in the last Congress is the Administration's secret. Although it is still insisted that they are for purposes of clarifying the adjustment act only, A.A.A. regards them as of great importance.

Embargo on Grapes Lifted

The ten-year embargo on Vinifera grapes from regions in which the Mediterranean fruit fly occurs has been lifted. The Bureau of Entomology has discovered a treatment that will destroy the fruit fly, and Spain recently sent over a shipment of 13,000 bbl. of grapes.

Under the new regulations, the grapes must, on arrival, be cooled until the center of the fruit in the package reaches 30 or 31 deg. F. and be held at that temperature for 15 days. The grapes must be packed in tight containers to prevent the escape of the fruit fly pending sterilization.

Best Storage Temperatures

After three years of study, Cornell scientists have recommended certain temperatures for the storage of particular vegetables. The temperatures (in degrees Fahrenheit) and the maximum storage periods follow:

Asparagus, 32 deg., one week; lima beans, 32, 2 to 3 weeks; beets, 32-40, 4 to 5 months; cabbage, 32-40, 5 months; carrots, 32-40, 6 months; cauliflower, 32, 30 to 40 days; celery, 32, 3 to 5 months; cucumbers, 32-40, 4 to 5 weeks; lettuce, 32 deg., 3 to 4 weeks; onions, 31-32, 5 months; green peas, 32, 2 weeks; parsnips, 32, 5 months; squash, 40, 5 months; sweet corn, 32, 3 to 4 weeks; green tomatoes, 50-60, 1 month; and ripe tomatoes, 40, 10 days.

Corn-Hog Control in 1935

Packers' hopes, if any, that they might be relieved of the processing tax on hogs have been squelched. A referendum of corn-hog producers has shown that 69 per cent of those voting favor continuation of the control program, and A.A.A. has announced that a new program for 1935 will be offered, under which production will be reduced 10 to 15 per cent from the 1933 level.

What Codes Cost

Approval of the $222,050 code budget of the candy manufacturing industry for the year ending June 16, 1935, was announced Oct. 13, and during the month three other food code authorities submitted budgets to N.R.A.

The budgets submitted are as follows: Wheat flour milling industry, $244,722.96, for year ending Oct. 1, 1935; preserve, Maraschino cherry and glacé fruit industry, $15,000, for year ending June 17, 1935; pretzel industry, $7,500, for the period from Aug. 27, 1934, to Feb. 27, 1935.

More Code Personnel

N.R.A. has approved code authorities for the coffee and pretzel industries and trade practice complaints committees for the candy manufacturing, canned salmon and California canning industries.

Other developments in regard to code personnel are the appointment of E. G. Montgomery to succeed Frank Gerber as treasurer of the canning code authority and the selection of Edward Bransten, M. J. B. Co., San Francisco, as regional code authority for the coffee industry in California.

The coffee code authority and the various trade practice complaints committees follow:

COFFEE INDUSTRY
(Code Authority)

Berent Friele, American Coffee Corp., New York; Robert Hilton, Jewel Tea Co., Barrington, Ill.; Carl H. Stoffregen, Steinwender, Stoffregen, New York; Herbert Delafield, Durand, McNeil, Horner Co., Chicago; Chas. H. Bain, Hills Bros., San Francisco; A. E. Weymeyer, Maury Cole Co., Memphis; Lot Boardman, W. S. Scull Co.,

PROMOTING THE PRODUCT

CLICQUOT CLUB CO. will conduct an "off-season" national magazine advertising campaign to promote its full-size bottles.

CALIFORNIA WALNUT GROWERS' ASSOCIATION introduces the nut season with full-page color advertisements in six leading women's magazines, featuring walnut dishes.

GENERAL FOODS CORP. inaugurated on Oct. 3 a coast-to-coast radio program, "The Log Cabin Inn," to promote its syrup. It is a Wednesday evening program over N.B.C.

STANDARD BRANDS, INC., is using 283 newspapers, a radio series over 54 stations and advertisements in 26 magazines to introduce Fleischmann's XR yeast.

CORN PRODUCTS REFINING CO. will sponsor a radio program, "The Gumps," which will be heard over C.B.S. stations five times a week.

WILLIAM SCHLUDERBERG-T. J. KURDLE CO., Baltimore, makers of Esskay meat products, recently put over an Esskay week by newspaper advertisements, recipe booklets and a limerick contest.

LA CHOY FOOD PRODUCTS, INC., will conduct an institute of Chinese cookery this winter.

ARMOUR & CO. has advised grocers that they can sell more goods by using lard as a sales leader and tying in the other commodities used with it.

SEEMAN BROS., INC., has found its "Something to cheer about" ads for White Rose Tea so effective that it is using the football theme in a national magazine.

HILLS BROS. CO. has started a seasonal advertising campaign on Dromedary gingerbread mix in women's magazines.

GOLDEN STATE, LTD., has been mentioned by International Association of Milk Dealers as having had the best dairy advertising campaign in 1934. Large newspaper space, radio, "menu flashes" on milk-bottle collars and other means were employed.

CALIFORNIA PACKING CORP. has inaugurated a campaign in magazines, newspapers, posters and other media, featuring a group of products each month.

Camden; and J. B. Osgood, Kansas City, Mo.

PRETZEL INDUSTRY
(Code Authority)

George H. Becker, Becker Pretzel Bakeries, Inc., Baltimore, Md.; L. J. Schumaker, American Cone & Pretzel Co., Philadelphia, Pa.; C. M. Greenhelt, Perfect Foods, Inc., Lansdale, Pa.; J. H. Walborn, Purity Pretzel Co., Harrisburg, Pa.; H. F. Noss, Noss Pretzel & Cone Co., Cleveland, Ohio; Jesse Smith, Williamsport, Pa.; and Dayton Schaffer, Schaffer Pretzel Bakery, Allentown, Pa.

CANDY INDUSTRY
(Complaints Committee)

Chairman, Ferdinand A. Bunte, Chicago, Ill.; W. E. Brock, Chattanooga, Tenn.; J. W. Brooks, Grand Rapids, Mich.; A. C. Carrington, Alameda, Calif., and J. M. Gleason, Charlestown, Mass.

(Inter-trade Relations Committee)

Walter Reid, Jr., Charms Co., Newark, N. J.; A. C. Carrington, Miss Saylor's Chocolates, Alameda, Calif.; C. H. Woodward, John G. Woodward & Co., Council Bluffs, Iowa; H. S. Martin, Queen Anne Candy Co., Hammond, Ind.; L. L. McIlhenney, Stephen F. Whitman & Son, Inc., Philadelphia, Pa.; Harry R. Chapman, New England Confectionery Co., Cambridge, Mass.

SALMON CANNING INDUSTRY
(Complaints Committee)

William Timson, Alaska Packers' Association, San Francisco, Calif.; D. W. Branch, Libby, McNeill & Libby, Seattle, Wash.; W. L. Thompson, Columbia River Packers' Association, Astoria, Ore.; H. B. Friele, Nakat Packing Corp., Seattle, Wash.; A. P. Wolf, Hood Bay Canning Co., Hood Bay, Alaska; A. W. Shiels, Pacific American Fisheries, South Bellingham, Wash.; R. A. Welsh, Jr., Bellingham Canning Co., South Bellingham, Wash.; H. V. Elfendahl, Skinner & Eddy Corp., Seattle, Wash.; A. W. Wittig, Shepard Point Mfg. Co., Seattle, Wash.; C. J. Sebastian, Sebastian Stuart Fish Co., Seattle, Wash.; and A. L. Gile, Chinook Packing Co., Chinook, Wash.

CALIFORNIA CANNING INDUSTRY
(Complaints Committee)

J. C. Warmington, Associated Canners, Inc.; B. H. Body, B. H. Body Co.; F. A. Wilder, Pratt-Low Preserving Co.; C. N. Lovegren, Hunt Bros. Packing Co.; and W. A. Gellersen, Libby, McNeill & Libby.

ROBERT K. STRAUS

He has been made deputy administrator of division 6 of N.R.A. to assist Armin W. Riley in administering the food codes

A & P Quits Cleveland

When FOOD INDUSTRIES went to press, speculation was rife as to the real reason why the Great Atlantic & Pacific Tea Co. closed its 300 stores in the greater Cleveland area. One theory has it that competition in the area had developed to a point where A & P found it to its advantage to withdraw and that the company used labor trouble as a convenient exit. Another theory is that other grocery interests joined hands with organized labor to run A & P out.

Two Codes Signed, Others Amended; Master Pact Awaits Administrators

All ready to operate, but with no administrative body, the new basic code for the food manufacturing industry is standing by while appointments of representatives to the Food & Grocery Manufacturing Advisory Board dribble in slowly. Meanwhile, codes for the pickle packing and pecan-shelling industries have been approved, several existing food codes have been amended, and changes are pending in others.

Effective Oct. 15, the pickle code sets a minimum wage of 32½c. an hour for men and 27½c. for women in the North, with a 7½c. Southern differential at salting stations during the season. Non-seasonal minimum rates are 22½c. for women and 27½c. for men in the South, 40c. for men and 32½c. for women in Northern metropolitan areas of over 100,000 population, and 35c. for men and 30c. for women elsewhere in the North. Office workers must be paid from $14 to $16 a week. The maximum week is 40 hours, with provision for eight 60-hour weeks during the year if needed.

The code further stipulates that a standards committee be appointed, that growers be paid within two weeks and that there be open prices.

The pecan-shelling code provides minimum hourly wage rates of 16½c. in the North and 15c. in the South, with $16 a week for clerical workers. It also establishes a 40-hour week and an eight-hour day.

An order terminating the exemption hitherto granted restaurant bakers from provisions of the baking industry code has been signed by Administrator Riley. N.R.A. also approved last month regulations permitting bakers in any State or region to prohibit by agreement selling on consignment. The hearing scheduled to consider complaints that the baking code sections prohibiting premiums tend to oppress small enterprises has been postponed indefinitely at the request of the complainants.

Inspite of strenuous efforts on the part of the bottling industry to obtain permission to establish lowest reasonable costs, N. R. A. has declined to allow this, refusing to recognize that an emergency exists in the industry. However, the bottlers did obtain permission to make consignments of goods for sale at fairs, festivals and similar gatherings. Independent of N.R.A., the code authority for the bottlers has launched a "cracking down" campaign to eliminate trade evils.

In an attempt to improve its code assessment plan, the candy manufacturing industry has asked N.R.A. to allow it to enforce a minimum code assessment of $12 a year. While the cocoa and chocolate industry is seeking permission to sell its products at any price desirable to charitable, relief or governmental agencies and to sell "distress" merchandise below prices filed in open price lists.

N.R.A. granted two demands of the macaroni code authority, approving the industry's plan of administering liquidated damages and also its idea of paying Southern labor five cents less than in the North.

The administration seeks to change provisions of the revised labor code for the fluid milk industry and has scheduled a hearing for Nov. 15.

CONCENTRATES

A.A.A. has no power to regulate a dairy concern operating entirely within a State, a federal judge in Des Moines has ruled . . . The Supreme Court has cast doubt upon the constitutionality of the minimum-price provisions of New York's milk control law by refusing to set aside a temporary injunction against their enforcement . . . The canning code authority has decided to approve petitions for flat piece rates which provide a wage reasonably comparable to the time rate under the code.

A movement is afoot to make potatoes a basic commodity . . . The Agricultural Adjustment Act has been extended to the Philippines in the case of sugar beets and sugar cane . . . A marketing agreement for the Puerto Rican citrus industry has been tentatively approved . . . Milk licenses were issued recently for the San Francisco and Southern Illinois areas.

Respondents in the Department of Agriculture's case against the twelve Southern meat packers were still submitting testimony last month at Memphis . . . Texas has passed a new oleomargarine law, making it the eighth State imposing a tax of 10c. per pound on the product when it contains imported fats or oils.

The second annual cheese week, intended to boost consumption, will be held Nov. 11-17 . . . Radium may be made from salt, according to an announcement in *The Physical Review* . . . Associated Grocery Manufacturers of America postponed their convention until Nov. 20-22 . . . An exposition of baking machinery will be held in Atlantic City in the Fall of 1935 . . . Minnesota State Dairyman's Association has been completely reorganized to revive its activity.

NEW EQUIPMENT

TO BE SEEN AT

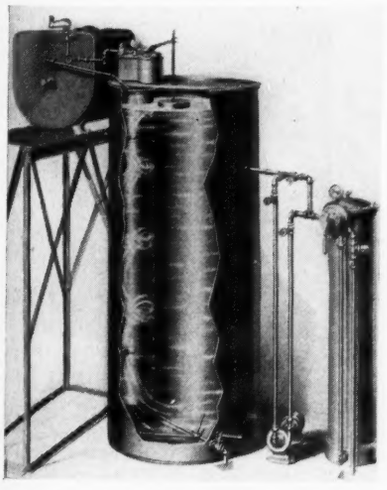
BOTTLERS' EXPOSITION

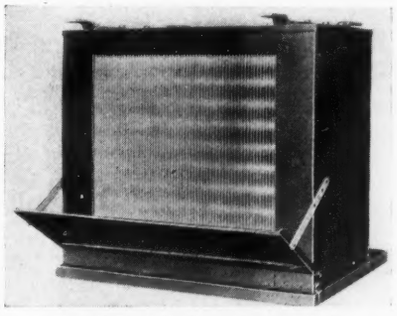
There will be gathered together in Buffalo, Nov. 12-16, samples of practically all the machinery and supplies used in bottling carbonated beverages. And the 4,000 or more bottlers expected to attend the convention of American Bottlers of Carbonated Beverages will have an opportunity to look over the field of available equipment in the booths of some 100 exhibitors.

Quality control being vital to the success of every bottler, no one will want to miss the laboratory display of A.B.C.B., where twelve methods for testing and control will be demonstrated. Featured in this exhibit will be the recently developed A.B.C.B. standard hydrometers and graduates.

Bottlers with water-purification problems will be interested in the exhibits of International Filter Co. and Norwood Filtration Co. International will demonstrate a new plant for removing from water objectionable alkalinity, suspended matter, chlorine and disagreeable tastes and odors, at the same time sterilizing the water. Norwood will have in its booth a water ozonizer of advanced design. This unit will destroy *B. coli* and other bacteria and microorganisms, thoroughly sterilizing the water, and it will take out objectionable odors, tastes and color.

Water-purification plant of International Filter Co.





"Flowing Cold" cooler made by Frigidaire Corp.

Something new in labeling equipment will be shown by Oslund Bros. Machine Co. Of the automatic, rotary type, the labeler is simple and compact. It will apply foil to the tops of bottles at the same time that it puts on the neck and body labels, and it will overlap the neck label on the bottom edge of the foil, if this be desired.

"Permacolor" bottles conforming to the trend toward more color in glass containers will attract attention in the booth of Owens-Illinois Glass Co. An innovation in the beverage industry, the bottles can be had with firm name or trademark in red, blue, green, yellow, black or orange yellow, these colors being annealed into the glass.

"Permacolor" bottles developed by Owens-Illinois Glass Co.

Frigidaire Corp. will have on exhibit its recently developed "Flowing Cold" forced-air cooling unit intended to refrigerate bulk storage rooms or large walk-in coolers. This comprises a cabinet in which are mounted an evaporator coil, a thermostatic expansion valve and an electric fan.

In the line of delivery equipment for bottlers, several developments of the past year will be exhibited in the booths of the various truck companies. General Motors Truck Co. will show a new tractor and semi-trailer; White Co. will exhibit its new six-cylinder, low-priced truck and International Harvester Co. will display new streamlined models. Dodge Bros. Corp. and Chevrolet Motor Co. also will show new trucks.

While the exhibits mentioned here are high spots gleaned from a preconvention survey of the exposition, there will be scores of other machines which the bottlers should see if they are contemplating buying new equipment.

Automatic labeler of Oslund Bros. Machine Co.

New tractor model built by General Motors Truck Co.

MEN . . . JOBS . . . AND COMPANIES

Industry

BALBOA BREWING Co. recently opened a new million-dollar brewery at Los Angeles.

BELLE CENTER (Ohio) DAIRY Co. has gone into production with an output of 1,300 lb. of cheese daily.

CANADIAN WINERIES, LTD., has completed a new plant at Lewiston, N. Y., which has a present storage capacity of 100,000 gal. and eventually may be expanded to accommodate 1,000,000 gal.

CUDAHY PACKING Co. on Oct. 22 discontinued operation of its plant at Des Moines. Equipment located there will be transferred to Omaha.

DWIGHT EDWARDS COFFEE Co., San Francisco, recently opened a branch factory at Dallas, Texas, transferring Zeke Overstreet to take charge of the plant.

ELKHART PACKING Co., Elkhart, Ind., recently installed a large sewage-disposal plant to replace its septic system, which has proved inadequate.

ENZO-JEL Co., Sheboygan, Wis., has been taken over by Philip Davis, who is associated with Pabst-ett Corp., Chicago.

FANNY FARMER CANDY SHOPS, INC., Boston, will increase its common shares from 100,000 to 400,000 and reduce preferred from 45,000 to 6,650.

FLEISCHMANN Co. is constructing a $135,000 addition to its Chicago plant.

GENERAL FOODS CORP., New York, has just placed sizable orders for new construction and new machinery.

HERSHEY CHOCOLATE CORP., Hershey, Pa., will construct a three-story, air-conditioned building, 40x344 ft., to house its offices.

JONES MEAT PACKING Co. has opened a $200,000 plant at Portland, Ore., with Mrs. Ethel S. Jones in charge.

KRAFT-PHENIX CHEESE CORP. has formed Table Food Concentrates Co., Chicago, with J. L. Kraft as president.

LOFT, INC., Long Island City, N. Y., is said to be planning to enter the wholesale confectionery manufacturing business, in which it will cater to jobbers. A separate plant will serve the new trade.

MARS, INC., Chicago, is expanding, having leased office and warehouse space in Pittsburgh, Pa.

OZARK CHEESE FACTORY has moved its plant from Ozark, Mo., to Tullahoma, Tenn. The new plant has an initial capacity of 20,000 lb. daily.

PACIFIC CAN Co. will erect a new million-dollar canning plant at Stockton, Calif. The plant will consist of two canning units with a capacity of 1,000,000 cases a year and a can-manufacturing plant. It will pack fruits and vegetables.

PHILLIP BEST & Co., Paris, Ill., has been taken over by Illinois Cereal Mills, Inc., of the same city, and will be modernized.

PHILIP HOUCK MILLING Co., North Tonawanda, N. Y., for 50 years in the flour and feed-grinding business, has closed and will sell its property.

RATH PACKING Co., Waterloo, Iowa, will make a $182,000 addition to its power plant and will install a new boiler and a bleeder turbine.

SEVEN BAKER BROS., Pittsburgh, has been placed in the hands of trustees, who will supervise reorganization.

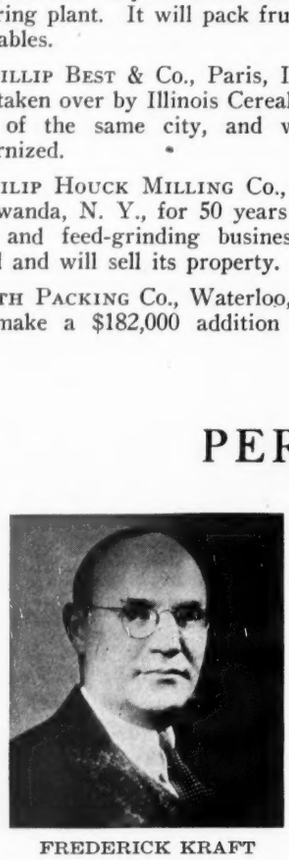
SNIDER PACKING Co. will install quick-freezing equipment at the plant which will be built in Harlingen, Texas.

SPENCER KELLOGG & SONS Co. has equipped its plant in Des Moines for soya bean oil extraction.

WESTERFIELD CANDY MFG. Co., Detroit, has purchased the equipment of Willeray Candy Co., Jackson, Mich., and has moved its main plant to Jackson. The firm is expanding its line of products.

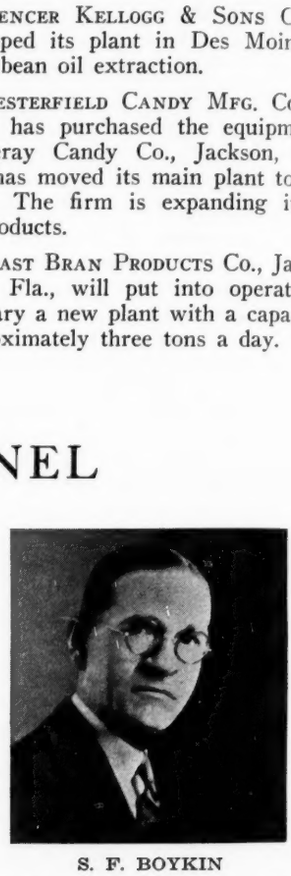
YEAST BRAN PRODUCTS Co., Jacksonville, Fla., will put into operation in January a new plant with a capacity of approximately three tons a day.

PERSONNEL



FREDERICK KRAFT

Vice-president of Kraft-Phenix Cheese Corp. and manager of its Eastern division, who has taken over direction of the company's subsidiaries. He is succeeded as Eastern director by Harry L. Bauer.



S. F. BOYKIN

Recently made president of Coca-Cola Co., Atlanta, Ga., he will head the manufacturing end of the company's business, assisting R. W. Woodruff, president of the parent Coca-Cola Co., Wilmington, Del.

CLAY BACHELDER has been elected president of the newly organized Indiana Canners' Protective Association. Herbert Eickhoff is vice-president; J. J. Rogers, secretary.

DANA H. BAILEY, dairy specialist at Pennsylvania State College, has entered the employ of Pfaudler Co., Rochester, N. Y.

EDWARD C. BOSTOCK, Philadelphia, is now president of Michigan Sugar Co., Saginaw, succeeding George B. Morley. GEOFFREY S. CHILDS, Bay City, Mich., has been named vice-president and secretary, succeeding Fred L. Crawford.

C. W. BROWN, formerly of Decorah, Iowa, on Oct. 1, took over management of the Omaha plant of Atwood Coffee Co.

ROBERT A. BURNS, sales manager of Whiting Milk Cos., Boston, has been elected national chairman of sales and advertising of International Milk Dealers' Association.

NATHAN DANZIGER has been made general sales promotion and advertising manager for Golden State Co., Ltd., San Francisco.

GEORGE V. DAYTON, Towanda, Pa., was reelected president of Buckwheat Millers' and Shippers' Association. P. G. SCHUMACHER was named secretary-treasurer.

CHARLES A. DUNNING on Oct. 15 was

elected president of Maple Leaf Milling Co., Ltd., Toronto. C. W. BAND became vice-president.

WILLIAM R. GREEN, chief chemist of the Kansas City (Mo.) laboratory of Continental Baking Co., Inc., has been named chairman of the Kansas City section of American Association of Cereal Chemists.

CHARLES HENRY, Hecker - Jones - Jewell division of Standard Milling Co., Buffalo, has been elected chairman of the Niagara Frontier chapter of American Association of Cereal Chemists.

J. F. HOBIN recently was promoted from traffic manager of Allied Mills to manager of their Century Co. subsidiary.

NORMAN J. HOLMES has been appointed general sales manager of Salada Tea Co.

JAMES INGRAM, former manager of the Philadelphia sales district of General Foods Sales Co., Inc., on Oct. 15 was moved to the New York headquarters staff of the company.

HERBERT S. JOHNSON, active in the produce business for 40 years, has resigned his position as vice-president of Armour & Co., effective Nov. 1. He has been in charge of the butter, poultry, eggs and cheese division of the company. He is succeeded by R. E. PEARSALL, for six years his assistant.

W. N. LUMMIS has been named Mid-West manager for Canada Dry, Inc., to succeed H. L. Richardson, resigned.

ARCHIBALD C. MACMILLAN, Winnipeg, has resigned as treasurer of Lake of the Woods Milling Co., Ltd., on account of ill health. He had been with the company since 1902.

GEORGE S. MILNOR recently resigned as vice-president and general manager of Farmers' National Grain Corp., Chicago. He plans to return to private business.

H. L. PERRIGO was reelected president of New York State Millers' Association on Oct. 4.

W. L. QUINLAN, Reading, Pa., is the new president of National Pretzel Manufacturers' Association. HENRY G. BURKE, Baltimore, remains secretary.

J. D. RINEHART, formerly production manager of Noaker Ice Cream Co., Canton, Ohio, is now superintendent of the ice cream plant of Swift & Co., Chicago.

JACK SCHNEIDER recently resigned from Cushman's Sons, New York, to go with Kaase's Bakeries, Cleveland.

CHARLES SPEIDEL, former president of New York State Manufacturing Retail Bakers, has been appointed secretary of the code authority in the Buffalo (N. Y.) area.

PAT J. TAFT

For three months managing director of the Industrial Recovery Division of National Confectioners' Association, he has been elected secretary-treasurer of the organization.

D. A. WEEKS, manager of the Denison (Iowa) plant of Armour & Co., has been transferred to Chicago as district manager. A. F. Blaschke succeeds Mr. Weeks as manager at Denison.

HENRY WELLENKOTTER, brewmaster for ABC Brewery, St. Louis, has been elected general manager. R. D. ROBINSON, former investment banker, Indianapolis, has succeeded R. S. Hawes, Jr., as president, and J. E. HOLMAN, JR., former sales manager, is vice-president.

DEATHS

WILLIAM H. BOWLBY, manager of Massolt Bottling Co., Minneapolis and president of Minnesota State Bottlers' Association, Oct. 1.

ROBERT I. COHEN, SR., 77, president of American Maid Flour Mills, Houston, Texas, at Galveston, Oct. 15.

JOHN S. ELLITHORPE, 70, vice-president and director of Beech-Nut Packing Co., at Syracuse, N. Y., Oct. 19.

WILLIAM V. FLEITZ, 49, executive of Standard Brands of South America, at Rio de Janeiro, Oct. 13.

HARRY F. HEMPERLY, 53, sales manager for Trout Baking Co., Boonville, Mo., at Boonville, Oct. 15. At one time he was manager of the Kansas City plant of Schulze Baking Co.

W. D. KYSER, 82, former president of Texas Cottonseed Crushers' Association, Marlin, Texas, Oct. 1.

CHARLES E. LOVEJOY, superintendent of production at the Chicago plant of Chase & Sanborn. He was with Chase & Sanborn for 47 years.

GEORGE J. MITCHELL, 58, vice-president and general manager of Canada Dry Ginger Ale, Ltd., at Montreal, Oct. 26.

GEORGE BURNHAM MORRILL, 67, president of Burnham & Morrill Co. for 25 years, at Portland, Me., Sept. 28.

WILLIAM A. PIACENTINI, 52, for several years with American Bottling Co., Providence, R. I., Oct. 6.

CHARLES REIF, 68, president of Purity Extract Co., Chattanooga, Tenn., and connected with Chattanooga Brewing Co., Chattanooga, Oct. 10.

GEORGE SLESSMAN, first president of National Kraut Packers' Association and president of Slessman & Sons, Clyde, Ohio, recently.

WILLIAM L. WALDEN, proprietor of Walden Bread Co., Hopkinsville, Ky., at Hopkinsville, Oct. 10.

FREDERICK W. WALLER, 86, former vice-president of National Biscuit Co., at Sarasota, Fla., Oct. 26.

Associated Industries

AMERCAN MACHINE & FOUNDRY CO., New York, has purchased from Tri-Une Machine Co., Hanover, Pa., all patents on its machine for mixing, testing and blending dry ingredients for cake.

AMERICAN ROLLING MILL CO., Middletown, Ohio, has opened a new sales office in Buffalo.

COMBUSTION ENGINEERING CO., INC., has formed a Western sales division with Roger W. Andrews in charge.

FRIES & BROS., New York, and ALEX FRIES & BROS., INC., Cincinnati, have appointed Ross & Rowe, Inc., New York, sole distributors of their line of flavors.

WILLIAM H. KEMBLE has formed a sales organization, with headquarters in New York, that will specialize in the direction of sales of foods, drugs and chemical products.

NATIONAL CAN CO., Boston, recently was acquired by Metal Package Corp.

NEW ENGLAND ALCOHOL CO., Everett, Mass., will install a solid and liquid carbon dioxide plant.

PACKAGING MACHINERY MANUFACTURERS' INSTITUTE, INC., New York, held its second annual meeting Oct. 12-13. H. H. LEONARD, Consolidated Packaging Machinery Corp., was re-elected president.

SHEPARD NILES CRANE & HOIST CORP. has closed its Philadelphia plant, concentrating all manufacturing divisions at Montour Falls, N. Y.

M. TEL-WARDI, Palestine, offers his services in establishing business connections in Palestine for the importation of American foods.

BUSINESS TRENDS

Flour Production Increased Over 1933

September, 1934, flour production was 5,730,998 barrels, up 12½ per cent over September, 1933, while the production for the three months period ending September 30, 1934 increased 4 per cent to 15,914,038 barrels, according to figures compiled by General Mills, Inc., covering 90 per cent of the industry.

Eastern Apples Scarce

New York State apple crop is estimated at 10,800,000 bu., 5,260,000 bu. below 1933. Pennsylvania reports an average crop of 8,000,000 bu., while Virginia's 8,000,000-bu. ouput is about two-thirds of normal. Western growers are harvesting a nearly normal production. The estimate for the country is 115,260,000 bu., off from 142,981,000 bu. produced last year and the average production of 156,300,000 bu.

Ice Cream Consumption Higher

Ice cream sales for the first eight months of 1934 were 19.4 per cent higher than in the corresponding period of 1933. During these months, practically all ice cream plants operated at about 50 per cent of normal rates, according to the opinion expressed in the Comptroller's Council of the International Association of Ice Cream Manufacturers at the recent Cleveland convention.

Food Sales, Dollar Volume Up

Parallel to the trend in general retail sales, food sales contiuue to increase. In 1933 food sales increased over 1932, reaching a total of about 90 million tons for the year, valued at approximately $18,000,000,000. This year the increase has continued, except for the period May to July, and August and September have each shown good gains. For the nine months ending with September, sales of both wholesale and retail firms are up 10 to 20 per cent in dollar volume over the corresponding period of 1933. In this advance, nationally advertised lines take the lead.

Indications of this increase show in the recent reports of chain stores. For the five weeks ending Sept. 29, First National reported sales 3.6 per cent over same period of 1933, and for 26 weeks 4.8 per cent up. For four weeks ending Oct. 6, Kroger sales were up 7.2 per cent, and for 40 weeks, 7.7 per cent. For same four weeks, Safeway sales were up 8 per cent, and for the 40 weeks, 9.7 per cent. These figures compare with increases for September sales by Montgomery Ward of 40 per cent; Sears, Roebuck & Co., 18 per cent, and J. C. Penney, 22 per cent.

Advance in dollar volume of food sales should be considered along with the fact that selling prices have increased 8 to 15 per cent over the same period of 1933.

Business Expectant

Assurances from the Administration that it wishes to go along with business to speed recovery and thereby bring about a reduction in expenditure of federal funds for relief are too recent to have had any effect on business conditions.

The usual seasonal upturn is only about 1 per cent, as indicated by *The Business Week* index, which for the week ending Oct. 20 was 58.6 per cent of normal, as compared with 58.0 per cent for the weeks of Sept. 22 and Aug. 18. Industrial production is lower, partly due to interruption by strikes; car loadings are declining without bettering last year's volume; and third-quarter earnings of industrial concerns show the effect of increased costs without the benefit of higher prices for their products.

Wholesale prices reported by U. S. Department of Labor during the three weeks ending Oct. 13 turned downward. All commodities declined 1.42 per cent, farm products 3.53 per cent, and foods 2.48 per cent.

The importance of commodity prices as an index of business conditions is further indicated by the weighted price index of the New York *Journal of Commerce*. It reports that for the four weeks ending Oct. 27 all commodities declined 2.2 per cent; grain prices fell an additional 4.98 per cent; and foods dropped 2.95 per cent. Even at previous higher prices wholesale grocers find tonnage sales 5 to 10 per cent greater than a year ago.

More Fish in Storage

Cold-storage holdings of fishery products in the United States on Sept. 15 were 43 per cent more than a year ago and 9 per cent over the five-year average, according to the Bureau of Fisheries.

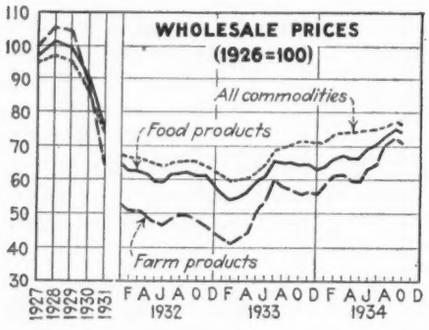
Holdings on Sept. 15 amounted to 73,648,000 lb., compared with 51,475,000 lb., on Sept. 15, 1933, and the five-year average of 67,374,000 lb.

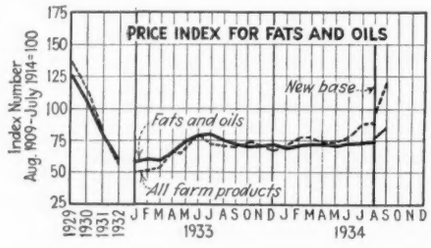
During the 30 days ended Sept. 15, 18,832,000 lb. of fishery products were frozen, compared with 12,629,000 lb. frozen in the corresponding period of 1933, the report stated.

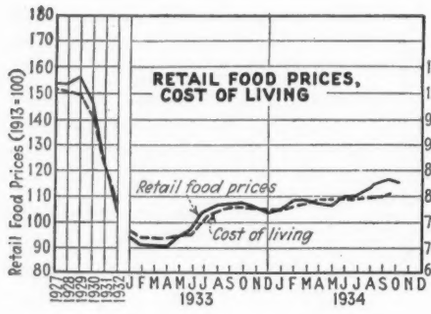
The quantity of fish in storage is an indication of the competition that may be expected from this source by meat packers, poultry raisers, egg producers and cheese makers during the coming winter season. The trawler strike at Boston will reduce the October catch very materially, however.

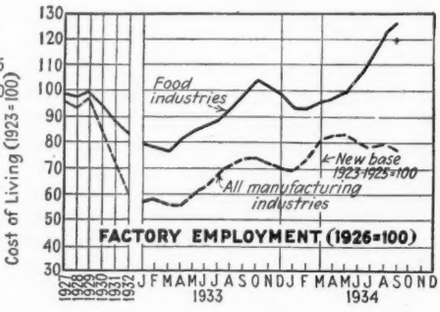
BASIS FOR THE CURVES

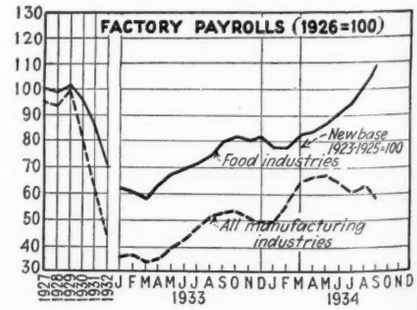
Retail food prices, factory employment, factory payrolls and wholesale prices based on indexes of the Department of Labor. Cost of living index is that of the National Industrial Conference Board. Indexes of prices of fats and oils, and of all farm prices are from the U. S. Department of Agriculture, as are the per cent of parity prices.




PRICE INDEX FOR FATS AND OILS
Index Number Aug. 1909-July 1914=100
New base
Fats and oils
All farm products
1929 1930 1931 1932 1933 1934


RETAIL FOOD PRICES, COST OF LIVING
Retail Food Prices (1913=100)
Cost of Living (1923=100)
Retail food prices
Cost of living
1927 1928 1929 1930 1931 1932 1933 1934





Higher Prices and More Competition for Meats

Fewer meat animals than in 35 years indicate higher prices in 1935, according to C. A. Burmeister, senior economist of the Bureau of Agricultural Economics, speaking before the annual meeting of the Institute of American Meat Packers in October. An acute shortage of cattle, sheep and hogs is in prospect for next year, and the effect on prices will be evident for several years.

In the face of these higher prices, which naturally will lower consumption, meat is already losing ground in its competition with fish, canned foods and cheese. In an address before the same meeting, S. A. Douglas, director of meat sales and purchases for Kroger Grocery & Baking Co., stated that his concern, as well as others, had lost large quantities of fresh and smoked meat tonnage during the past year, but that this volume has been replaced largely by canned tuna fish and salmon, oysters, fresh and frozen fish, and cheese.

More aggressive and modern merchandising methods are needed, if meat is to regain and hold its former position.

Peas, Asparagus, Corn and Tomatoes

Final estimates of the U. S. 1934 pea pack, made by the National Canners' Association, show a total of 15,359,653 cases of all sizes, equivalent to 15,741,569 standard cases. This total is based on reports of 272 firms and on estimates of the statistical division of N.C.A. for the seven firms not reporting. Stocks of peas in canners' hands Sept. 1 totaled 7,336,330 cases, all sizes, of which 1,838,827 were Alaska and 5,497,503 were sweets.

Asparagus canners in all producing States turned out a total of 2,149,131 cases, all sizes, in 1934, of which 1,278,731 cases were regular and 870,400 cases were all green.

Totals of the 1934 corn pack are not yet available. In spite of earlier estimates of a larger pack than 1933, recent reports indicate a pack far below expectations, especially in the Central States. Cool weather, followed by rains, combined with the ravages of ear worms and other pests, have held down the pack. As a result, in some sections of Iowa and Indiana white field corn is being packed, in order to have something to sell.

Tomato canning will continue until after Nov. 1, provided the weather holds, and figures for the total pack will not be available until after that date. Reports from California and parts of the East indicate normal volume for those localities, while many sections of the Middle Atlantic States do not expect to realize more than 50 per cent of a normal pack. Virginia and the Carolinas report low yield, as do the Northwestern States. In Indiana some canners are packing around 80 per cent of the average crop.

October Crop Report

Reports of crop conditions as of Oct. 1, made by Crop Reporting Board, indicate the smallest grain crop in 30 years, although the estimated 1934 wheat crop is 496,982,000 bu., an increase of about 4,000,000 bu. over the Sept. 1 estimate. The estimate of the corn crop is 1,416,772,000 bu., a decrease of 5 per cent since Sept. 1 and 56 per cent of normal. Oats production is estimated at 545,938,000 bu., compared to 731,524,000 bu. in 1933 and a five-year average of 1,186,956,000 bu. Barley is off to 122,240,000 bu., 22 per cent below 1933 and 56 per cent less than the five-year average.

Grains are not the only crops to show low yields. Potatoes are nearly normal, with an estimated yield of 362,391,000 bu., against 365,556,000 for the five-year average. Dry beans are estimated at 9,400,000 bags, against a five-year average of 11,600,000 bags and 12,300,000 bags in 1933. Sugar beets are down to 7,550,000 tons from 11,030,000 tons last year. Contrary to this trend, the estimated peanut crop is about 10 per cent higher than last year, at 1,050,000,000 lb. of nuts, and sweet potatoes and some other crops show some increase.

CONSTRUCTION NEWS

	Pending (thousands)	Awarded October (thousands)	Total Awarded 1934 (thousands)
Bakery	$69	$59	$742
Beverages	420	262	7,897
Canning and Preserving	220	65	1,172
Confectionery	.....	.....	133
Grain Mill Products	440	265	4,035
Ice, Manufactured	28	29	87
Meats and Meat Products	431	231	1,263
Milk Products	125	209	1,629
Sugar	.....	.....	105
Miscellaneous	75	60	1,094
Total	$1,808	$1,180	$18,157

INDICATORS

INCREASED PER CAPITA consumption of milk and its products, equivalent to 34 lb. of fluid milk per year, is needed to balance consumption with production, according to O. E. Reed, Bureau of Dairy Industry.

THE CORN-HOG RATIO, the number of bushels of corn required to buy 100 lb. of live hog at the farm, for the United States stood at 7.8 on Sept. 15, compared to 6.3 a month previous and 8.0 on Sept. 15, 1933.

MANY MAKERS of vanilla extract for industrial uses are now offering double-strength extracts in order to minimize the effect of the latest alcohol taxes on their costs.

FARM INCOME in June, July and August of this year totaled $1,508,000,000, including $133,000,000 in benefit payments. This is the best figure for a three-month period since the spring of 1933, announces L. H. Bean, economic adviser to A.A.A., and is 33 per cent of pre-depression levels.

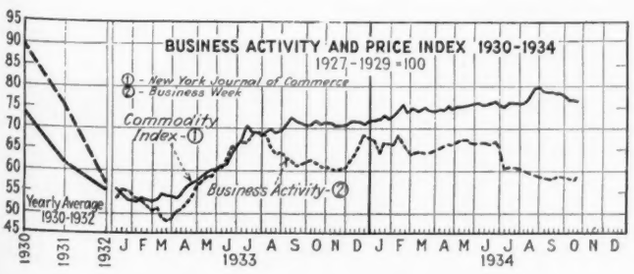
TEXAS PECANS will be scarce this winter, with several growing areas realizing only 25 to 30 per cent of a normal crop, while others report as low as 15 per cent. A price of 12½c. a pound is expected.

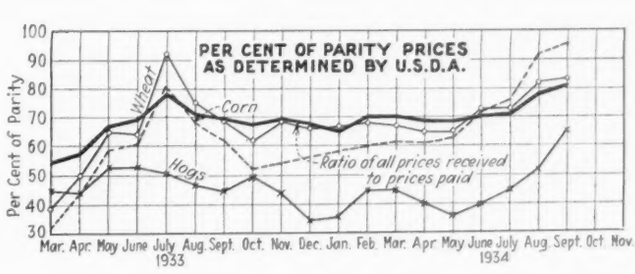
EVAPORATED APPLES produced in western New York will total between 100 and 125 cars, compared to the normal yield of between 450 and 600 cars.

PRIVATE CONSTRUCTION jumped in mid-October, being up to a total of $5,700,000 from a previous weekly average of $2,000,000. The awards were mostly small residential jobs.

SALES GAINS of from 25 to 75 per cent per unit were recorded by the Royal Scarlet voluntary chain in October. The occasion was a series of city-wide sales to celebrate the fifth anniversary of the chain.

MORE FOOD-PROCESSING PLANTS received licenses in Indiana during the first nine months of 1934 than for the entire year of 1933.





NEW METHODS ...PACKAGES ...PRODUCTS

One-cup coffee packages, by G. Washington Coffee Refining Co., Morris Plains, N. J., are the latest contribution to consumer service. The container is a die-formed tube of pure tin, which is sealed by folding and crimping. The containers are packed in display boxes of 100 for delicatessens and in packages of 15 for grocery stores. The tube is opened by cutting off the crimped end.

It pays to package properly. Since adopting this container for its Coronet salad oil, Cudahy Packing Co., Chicago, reports a 400-per cent increase in sales of the product.

Having a self-sealing top, the cardboard carton used by Sebewaing Brewing Co., Sebwaing, Mich., fits into the production line and causes little delay. The flaps are simply tucked in. The carton protects the beer from light and makes a convenient six-bottle, take-home package. Hinde & Dauch Paper Co., Sandusky, Ohio, developed the carton.

Homogenizes Fibrous Foods For Baby Formulas

Homogenized vegetables, fruits, cereal and soup are new contributions to the science of infant feeding by Libby, McNeill & Libby, Chicago. Libby packs six different formulas of homogenized foods. One formula, for instance, contains spinach, carrots and peas; another, peas, beans and asparagus tips; a third, tomatoes, pumpkin and string beans.

Homogenization of foods containing quantities of crude fiber, such as vegetables and fruits, reduces the fibers to minute particles, breaks up the food cells and releases complete food value for easy digestibility.

New Use for Jelled Fruit

Vita-Cube ice cream sodas have been introduced on the Pacific Coast by Western Dairy Products. Cubes of jelled fruit in a variety of flavors and colors, mixed in with the regular soda, make this appetizing fountain specialty. A billboard campaign augmented with point-of-sale promotion pushes the new product.

How to Make Grape Ice

Grape ice and sherbets may be manufactured successfully by a method developed at the New York State Agricultural Experiment Station, Geneva, N. Y., according to station scientists. The method specifies that the basic ice mixture be frozen first and cold grape juice added from wooden or glass containers. Raw, unpreserved grape juice has proved more satisfactory than pasteurized juice, although the latter can be used. The grape ice made by this method is reported to possess excellent keeping qualities, both as to flavor and sugar crystallization, and in consumer tests the reaction was favorable.

Introduces Bread Improver

A bread improver that takes 200 per cent absorption and imparts new characteristics to the loaf has been announced by Joe Lowe Corp., Brooklyn, N. Y. This ingredient, called Velvert, may be added to white, whole wheat or raisin bread dough, 2½ lb. to 100 lb. of flour, with 5½ lb. of added water. The improver has no action on fermentation and requires no change in other ingredients, the manufacturer asserts. In outlining other advantages of the improver, Joe Lowe Corp. states that it produces fifteen more loaves per barrel of flour, whitens the loaf, gives the bread a nutty flavor, refines the texture and cell structure, imparts a golden color to the crust, and retards rope and mold formation in warm weather.

Lactose-Enforced Stout

A reinforced stout, each pint of which contains the lactose of 10 oz. of milk, is being distributed by R. C. Williams & Co., Inc., New York, N. Y. This "milk stout" is imported from London, where it is brewed and bottled by Whitbread & Co., Ltd. Its high food value makes it a health beverage. Bottles containing 11.5 and 6.4 oz. are on the market here.

American Cheese in Cans

Following experimental work done by the government, Land O'Lakes Creameries, Inc., Minneapolis, is introducing American cheddar cheese in tin cans. Made by the usual method, the cheese is pressed in hoops that measure 15 in. in length and 3¾ in. in diameter. The rolls of cheese thus formed are cut in lengths which are wrapped in transparent cellulose and sealed in the tins the same day. After packing, the cheese is held at 40 deg. F. for several months to cure. This method of packing eliminates the rind, and, Land O'Lakes have found, produces a mellow product of high quality.

The tins are vented and have a rubber diaphragm which seals the vent against the entrance of air, while allowing the gases generated in the curing process to escape.

If the canning of American cheese proves satisfactory after a trial run, Land O'Lakes may pack other kinds in this way.

Puts Honey in Loaf Form With Aid of Pectin

The bees have been outsmarted. Their honey has been put into a form where it retains its shape without the aid of beeswax cells. Wayne Farm Foods Co., New York, N. Y., has developed a process under which strained honey is mixed with a small quantity of pectin, poured into molds, allowed to set for a few hours, and then sliced into loaves. In this form, the honey may be cut into cubes, thin slices or other shapes which will "stand up" even though they be placed on hot meat. And the process has been carried even further to produce honey loaves flavored with wild cherry, crême de menthe, Canton ginger, curaçao (orange), mint julep and old rum. The last three are made with genuine liqueurs.

In its new form, the honey can be used on hot-breads; as a meat conserve; in sandwiches, salads, fruit cups and desserts; and as a cake decoration, ice cream topping or what have you.

Marketed in ½- and 2½-lb. loaves, the honey is packaged in full-vision, tray-type cartons covered with transparent cellulose.

Vegetable Vitamin D

Using a highly refined vegetable oil as a base, and dissolving in it a pro-vitamin from a vegetable source, Lancaster, Inc., Los Angeles, Calif., produces "Astra-D," a vitamin-D concentrate. The pro-vitamin used is highly activated by natural solar irradiation. The manufacturer reports that this concentrate is being used in bakery products, mayonnaise, cottage cheese, salad dressing, peanut butter, candy, macaroni products, jams and jellies.

Noodle-Shaped Nuefud

Nuefud, a noodle-shaped product prepared from corn and potato starches and egg yolk, has been developed by Perewe Products Co., Brooklyn, N. Y. In its preparation, the potato and corn starches are sieved, mixed with the liquid egg yolk until it becomes lumpy and then kneaded into an elastic dough. This dough is rolled into sheets of about $\frac{1}{16}$ in. thickness, air-dried and shredded. Nuefud has a starch content of 47.5 per cent and a carbohydrate content of 47 per cent. It also is high in protein.

Hoods Bottles by Hand

Believing that a customer buying standardized milk is just as entitled to a clean, sanitary bottle top as the one who purchases the top grade, Neal's Farms Creamery, Dayton, Ohio, now markets all of its milk in double-capped bottles. But instead of the regulation clamped cap used on the top grade, the company employs a soft parchment sheet on bottles containing its standard milk. This sheet is applied by hand as the bottles leave the capping machine, a rubber band holding it in place.

It Needed a New Name

Sometimes a product merely needs a new name to carry it to greater heights. Columbia Conserve Co., Indianapolis, Ind., thought as much about its Bean Sprouts, so the name was changed to "Salad Sprouts." This was a good move, because the bean sprout is inseparably allied with Chinese dishes, and the public must be told that it is equally edible as a salad garnish, vegetable dish or in soups. A list of recipes printed on the Salad Sprouts label informs the consumer of the product's possibilities.

Cheese With Vitamins D, A

Cream cheese has joined the fast-growing ranks of vitaminized foods. Columbia Cheese Co., Newark, N. J., fortifies each pound of its Lion brand cream cheese with 406 U.S.P. units of vitamin D and more than 2,800 units of vitamin A, using a vitamin concentrate recently developed by Health Products Corp., Newark, N. J. The company packs its cheese in 3-lb. loaves, 3-oz. foil-wrapped packages and 5-oz. cocktail glasses, selling it at the same price as ordinary cream cheese. There are four flavors: cream, pimento, relish and pineapple.

Deep-Fried Peanuts

Fried peanuts are produced by the Frito Co., Dallas, Texas. Styled "Frito Frys," the nuts are deep-fried in corn oil at a temperature of 350 deg. F. for two minutes. The company has found an increasing demand for this product and has been expanding its operations recently. National distribution is contemplated.

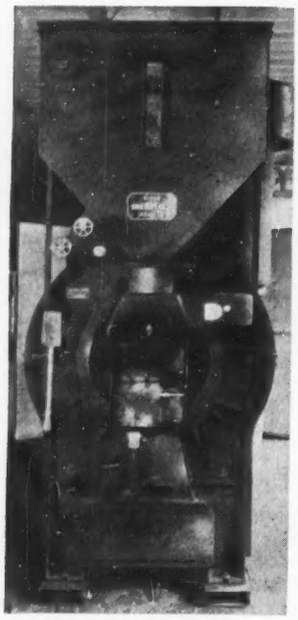
A carry-home carton with a cut-out handle has been adopted by Coca-Cola Bottling Co., Los Angeles. Made of green fiberboard, the carton bears a striking red and gold design and accommodates twelve bottles. A deposit of 3c. for each bottle and 4c. for the carton assures their return.

Sales impetus has been given the mayonnaise, sandwich relish and salad-aid packages of Durkee Famous Foods, New York, by making them similar in appearance. A different color combination distinguishes each product. The jars are by Owens-Illinois Glass Co.

Celery sandwiches, comprising two small crackers with a filling of celery relish, have been brought out by Peek, Frean & Co., Ltd., London. These are packaged in an impressive green carton with a transparent cellulose wrapping. The top of the carton is opened on three sides by pulling on a "rip cord."

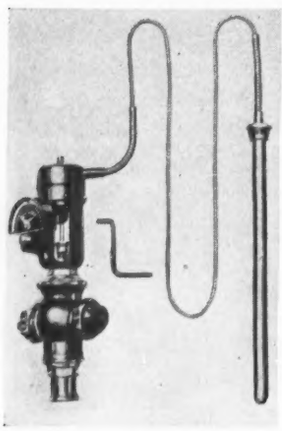
Attractive twin glass containers have been adopted by Crosse & Blackwell for their black-currant and strawberry preserves. The label design conforms unusually well with the container. Owens-Illinois Glass Co. makes the jar.

NEW • EQUIPMENT • FOR



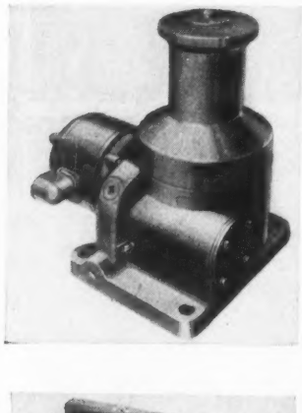
Coffee Roaster

Low-temperature roasting of coffee has been introduced in a new roaster by Jabez Burns & Sons, Inc., 11th Ave. and 43d St., New York, N. Y. In present roasting machines, the temperature of the heating medium when it first comes into contact with the coffee is from 2,200 to 2,400 deg. F. In the new "Thermalo" roaster, the heating medium enters the cylinder at from 800 to 1,000 deg. F. The manufacturer states that, in spite of this very much lower temperature, the circulating feature makes it possible to supply the same number of thermal units per minute, so that the coffee is brought to full roast in the same time. Advantages claimed are avoidance of "baking," no charred particles of chaff, heat application is uniform, danger of scorching or "spotting" is avoided, smoke cannot contaminate the coffee, and the machine is simpler to operate. These roasters are offered in 300- and 500-lb. sizes.



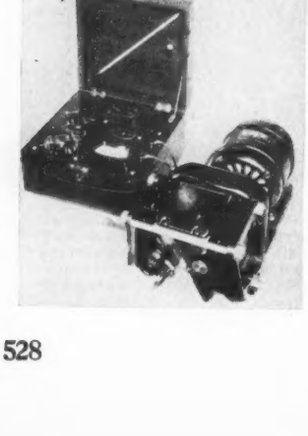
Temperature Control

Quick and accurate settings for control of varying processing temperatures are made possible by a self-contained regulator with graduated dial and pointer. With this device it is possible to "dial" the desired temperature. The regulator, made by Fulton Sylphon Co., Knoxville, Tenn., and known as No. 943, has a range of 100 deg. F. It is adjusted by a removable crank, one turn of which changes the regulator setting 10 deg. F. To insure tamper-proof settings, an Allen headlock screw is provided, operated only by a special wrench incorporated in the crank. The thermal bulb is furnished in a variety of styles and materials for application to drying operations, space heat control, liquid temperature control, and control of process temperatures.



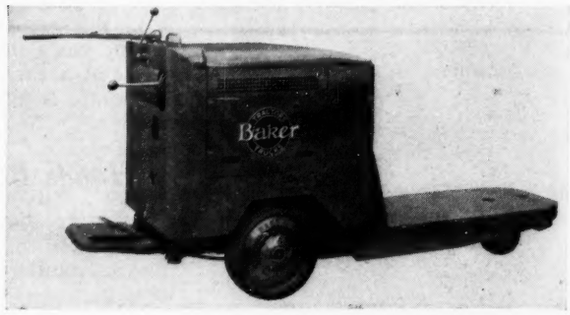
Car Spotter

For placing cars in factory yards, Link-Belt Co., 910 South Michigan Ave., Chicago, Ill., has developed a motorized car spotter in which the motor is directly attached at the side of the capstan, obviating the necessity for any motor-shaft coupling or separate motor baseplate. This machine is available in two sizes, the smaller with a rope pull of 5,000 lb.; the larger, 10,000 lb.



Moisture in Grain

Moisture in such grains as wheat, rye, corn, oats, barley and rice can be determined by the Heppenstall moisture meter, manufactured by C. J. Tagliabue Mfg. Co., Brooklyn, N. Y. Its operation is based on the variation of electrical resistance with change in moisture content of the grain. Current for the meter is supplied by dry cells contained in the case. The motor which drives the electrodes can be furnished for either direct or alternating current. In operation, a sample of grain is placed in the hopper and the motor started. As the grain passes between the rotating electrodes, an average deflection of the galvanometer is noted, and converted to moisture content by means of a conversion table.



Elevating Truck

Of 3-ton capacity, a new low-lift electric industrial truck has been introduced by Baker-Raulang Co., Cleveland, Ohio. This truck has a streamlined inclosure for the battery and other parts, avoiding protrusions that might hit obstructions and cause injury or damage. The frame is electrically welded. Brake size has been increased over former models. Standard platforms furnished vary from 55 to 84 in. in length. The standard lift is 11 in. giving ample clearance under the standard 12-in. skid. Lift is 5⅜ in. Standard platform width is 26½ in. When a platform 55 in. long is used, carrying a skid 60x36 in., a right-angle turn can be made in 68-in. intersecting aisles.

Regulating Valve

Oil flow to burners or other fluid through small pipes can be controlled by a valve developed by Hauck Mfg. Co., Brooklyn, N. Y. The feature of this valve is the elimination of

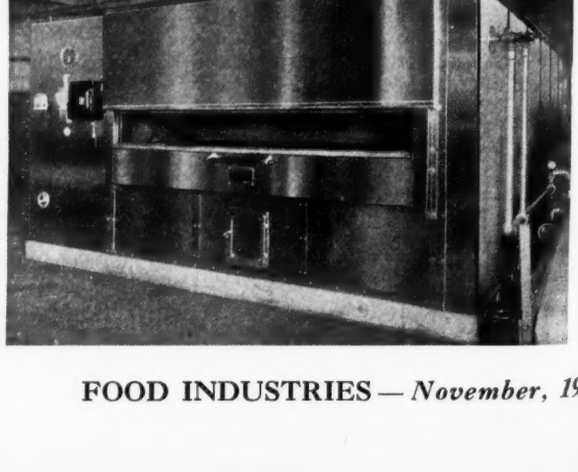
the customary needle or cone opening in a circular orifice, common to most regulators. Instead, regulation is obtained by means of two cylindrical sleeves, one stationary and the other rotatable. In one sleeve is a vertical slot, in the other a wedge-shaped horizontal opening. Rotation causes the slot to take varying positions along the wedge-shaped opening, more or less of it being thus available for the flow. Any number of variations in flow between maximum and minimum can be obtained.

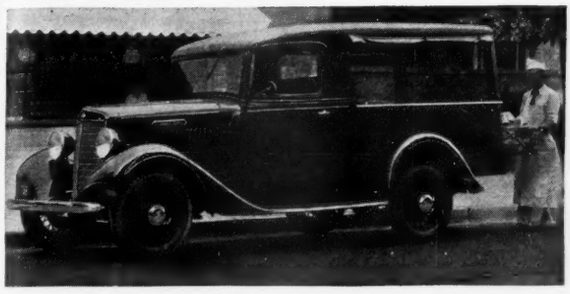
Grain Grinder

A method of grinding grain called "krinkling" is obtained by use of a new machine developed by the Wheat Krinkler Corp., Springfield, Ohio. This machine has spirally corrugated rolls that do not touch, so that no direct friction occurs, giving smooth, cool operation and long wear, also freedom from metallic particles in the product. The space between the rolls can be regulated to control fineness of product. The machine is 18x13 in. and 27½ in. high, with a capacity of three or more bushels per hour through the "coarse" adjustment. It uses a ¼-hp. motor. The product is of the breakfast cereal type.

Tray Oven

A traveling-tray oven of small capacity recently placed on the market by the Crawford Oven Co., New Haven, Conn., is designed to be used either as a unit in a group of ovens to give flexibility to baking operations or as an auxiliary to larger ovens. It employs a heavy steel roller chain and heavy trays. The intermittent conveyor causes each tray to stop at the door opening. Ball-bearing conveyor drive is used to combine maximum stationary loading time with smooth conveyor operation. The heating is indirect, using either oil or gas fuel. Steaming arrangements are provided. Ten-, 12-, 14- and 16-tray sizes are provided.





Streamlined Trucks

New truck models, streamlined in design, are announced by International Harvester Co., Chicago, Ill. The first of the line, Model C-1, of ½ ton capacity, has been on the market for some months. New models include model C-20, of 1 to 1½ tons rated capacity, with maximum allowable gross weight of 8,300 lb. This truck has a four-cylinder engine and is built in 133- and 157-in. wheelbases. Model C-35, with 78-hp. six-cylinder motor, is available in 136-, 160- and 175-in. wheelbases. It has a maximum allowable gross weight of 10,400 lb. Model C-40, rated 2 to 3 tons, with maximum allowable gross weight of 13,000 lb., has the same power plant as Model C-35. Its wheelbase range is 145, 155, 170 and 185 in. Model C-50, 3 to 4 tons rating, with wheelbases of 145, 156, 170 and 185 in., has a six-cylinder engine of 82.3 hp. Model C-55, built to carry 14,000 lb. and rated 3½ to 4½ tons, has a maximum allowable gross weight of 21,500 lb. Model C-60, 4-5 tons rating, has the same maximum allowable gross weight. These two trucks are both powered with six-cylinder engines of 90.4 hp. and have wheelbases of 140, 156, 170, 190 and 210 in.

Refrigerated Bag

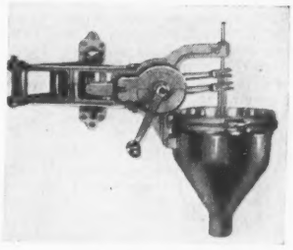
Shipping of perishables requiring refrigeration, such as yeast, can be accomplished in a bag developed by Zero Bag Co., St. Louis, Mo. This is an insulated container of light weight and flexible bag construction which can be folded and baled for returning to the plant. It can be fitted with dry-ice pockets so that refrigerated effect can be secured when desired. The bags, when filled, will go in a standard 13x13x10-in. fiberboard box. Insulation is Dry-Zero Sealpad. Weight is 6 lb.

Small Mixer

Intended for laboratory and small process work, Poromixer, developed by Patterson Foundry & Machine Co., East Liverpool, Ohio, is lined wth "Porox" to make it acidproof. The agitator, equipped with Monel metal shaft and propeller-type stirrers, and the holding tank are removable. The holding tank is equipped with a Monel metal outlet valve, flush with the bottom, and a nozzle from which the contents may be discharged in any direction. This mixer is available in two sizes, 5 and 10 gal., both powered with 1/6-hp. motors.

Carcass Marker

An ink-electric carcass marker, developed by Everhot Mfg. Co., Maywood, Ill., is said to give positive inking of the die-roll by brush. The flow of ink can be regulated. The die-roll automatically contacts with the brush when marking. Electrical heat is furnished inside the engraving wheel, to dry the ink on the carcass. This device, which uses No. 65-A die-rolls, is furnished with a 2-in. wide wheel and a 30-in. handle.



Doughnut Machine

Type D, Gem doughnut machine is the designation of a new model brought out by the Gem Doughnut Machine Co., Waterloo, Iowa. The capacity is 500 dozen and over per hour. The machine is made of aluminum, with brass bushings. Dies are interchangeable, standard sizes being 1½ in., 1⅝ in. and 1¾ in. Special larger or smaller dies can be provided. Weight of cakes can be regulated by dial setting. Loosening two wing nuts disassembles the machine for cleaning. The motor is ¾ hp., 60 cycle, 110 volt standard, other motors being furnished at extra cost. Hand operation also is possible.

Milk-Can Washer

One hundred and fifty washed, rinsed, sterilized and dried cans and covers is the capacity of a new small-size rotary can washer made by Oakes & Burger Co., Cattaraugus, N. Y. The machine is rotary, and as it revolves the operations are as follows: Load, pre-rinse, drain, solution wash, drain, rinse, sterilize, steam, air-blast, unload; ten positions in all. The machine stops 9 seconds in each position, with actual treating time of 11 seconds. Openings for unloading and loading are large, and there are three doors around the machine, giving easy access. The makers claim for this machine the production of sterile cans, free from *B. coli*.

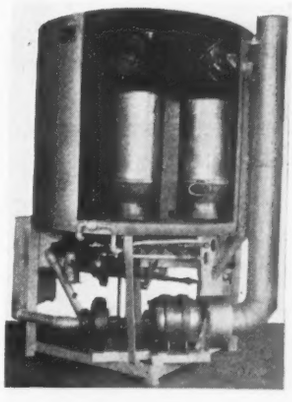
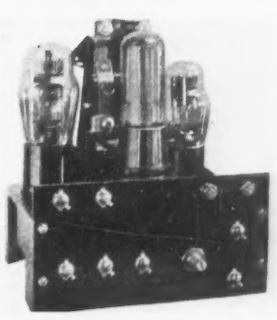


Photo-electric Relay

For general industrial use, a lower-priced photo-electric relay is announced by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. The heavy-duty contactor in this new "LE" relay interrupts 20 amp., 115 volts a.c., non-inductive load, or 3 amp., 115 volts d.c. In such applications as counting, the operating speed ranges from 200 to 600 objects per minute, depending on the amount of light change available and the resistance of the contacts. The relay is fully inclosed. Phototube housings can be mounted on standard rigid conduit or flexible armor, splashproof housings being available for outdoor work or places where dust and moisture are present. Suitable light sources for any of these applications are available. Gas or vacuum phototubes can be used.



The Manufacturers ••Offer••

Spot Crowns—Disks or spots of aluminum, tin, paper and other materials, used to improve the seal made by the ordinary bottle crown when used as a cap for beer, wine, fruit juices and carbonated beverages, are described by Crown Cork & Seal Co., Inc., Baltimore, Md., in a handsome 62-page catalog, illustrated in color.

Anti-Freeze—Denatured alcohol and "Zerone," anti-freeze products for car and truck, are described by E. I. duPont de Nemours & Co., Inc., Wilmington, Del., in two new folders.

Tribute — An appreciation of the services of the food industries to the American nation, by Anchor Cap & Closure Corporation, Long Island City, N. Y., is expressed in a recent folder.

Equipment Rating—A method of scoring bakery equipment, as to condition and serviceability, given by Baker Perkins Co., Saginaw, Mich., in a reprint of an article by Peter Pirrie.

Wort Cooling—A three-stage system, made by the Carbondale Machine Co., Carbondale, Pa., described and illustrated in an 8-page pamphlet.

Sixteen Hours a Day—50-page illustrated catalog of sevices offered by Columbia Broadcasting System, 485 Madison Ave., New York City.

Rubber Tractor Tires—Low-pressure tires in farm and similar tractor services, described in booklet of B. F. Goodrich Co., Akron, Ohio, with specifications and other data.

Food Research — 40-page, priced catalog of A. A. Lund & Associates, classifying and explaining 100 varied services in research and sales offered to the food industries.

Resists Corrosion—Salt, brine, or sea-water corrosion resistance offered by Monel metal is described in a pamphlet issued by International Nickel Co., 67 Wall St., New York City.

Gears — General Catalog of Philadelphia Gear Works, Philadelphia, Pa., 50 pages, illustrated, gives prices and dimensions of full line of gears, speed reducers and couplings.

Toncan Metal—Copper-molybdenum iron, for service where corrosion is encountered, is the subject of a folder issued by Republic Steel Corp., Massillon, Ohio.

Vacuum Pumps — High-duty rotary type, for such service as required by paper making and similar operations, described by Roots-Connersville Blower Corp., Connersville, Ind. Bulletin 50-B11.

How Monsanto Serves—Is the title of a newly revised booklet issued by Monsanto Chemical Co., St. Louis, Mo., dealing with this company and some of the uses of the chemicals it produces.

Sales Helps—Advertising displays and novelties for ice cream manufacturers, made by Parisian Novelty Co., 3510 South Western Ave., Chicago, Ill., are illustrated in a current folder.

PATENT DIGEST

COMPLETE TEXT *of any United States patent may be obtained by remitting 10c. (not stamps) to the Commissioner of Patents, Washington, D. C. Patents should be ordered by number, as titles used in this digest seldom correspond with title of patent.*

Coffee Roasting Completed in Current of Steam to Distil Off Flavor Impairing Substances but Retaining Valuable Oils—Eduard Adolf Closmann, Fritz Artur Vorsatz and Karl Alfred Kasper, Leipzig, Germany, to Commersinag. Aktiengesellschaft, Glarus, Switzerland. No. 1,972,184. Sept. 4, 1934.

Extraction of Juice From Skinless Fruits—Santiago Estrada, Enrique Mauri and Armando Ivey, Havana, Cuba. No. 1,972,649. Sept. 4, 1934.

Method of Homogenizing Milk to Reduce Formation of Hard Curd in Infants' Stomachs—Rudolph Fluckiger, Riverside, Ill. Three-fourths to George R. Farmer, Brookfield, Ill. No. 1,973,145. Sept. 11, 1934.

Caffein-free Coffee Prepared by Steaming and Extraction of Unroasted Coffee Beans—Eduard Adolf Closmann to Quieta-Werke Alfred Kasper, Leipzig, Germany. No. 1,973,247. Sept. 11, 1934.

D-Glutamic Acid Prepared From Concentrated Solution of the Hydrochloride by Adjustment of pH Value to About 3.2—Albert E. Marshall, New York, N. Y., to Larrowe-Suzuki Co., Rossford, Ohio. No. 1,973,574. Sept. 11, 1934.

Pectin Prepared in Dry Form From Pectin-Glycerine Mixture — William W. Cowgill, Fairfield, Conn., to Sardik, Inc., Jersey City, N. J. Nos. 1,973,613 and 1,973,614. Sept. 11, 1934.

Vacuum-Packing Sealed Containers in Steam at a Pressure Greater Than Atmospheric—Charles W. Lang, Brooklyn, N. Y., to the Food Processing Co., Philadelphia, Pa. No. 1,973,634. Sept. 11, 1934.

Dry Dessert Preparation Containing Agar Agar as Jelling Agent—Hyman Sher, New York, N. Y. No. 1,974,474. Sept. 25, 1934.

Cheese Immersed in Oil to Cure and Ripen—Emery Fox Goss and Bernard Wernick Hammer to Iowa State College of Agricultural and Mechanical Arts, Ames, Iowa. No. 1,974,847. Sept. 25, 1934.

Finely Grained Pan-Baked Bread Obtained by Forming Loaves From Several Individually Formed Doughs — Daniel C. McCarthy, Evanston, Ill., to Purity Bakers Service Corp., Chicago, Ill. No. 1,973,926. Sept. 18, 1934.

Methhod of Making Rye and Mixed Breads From Flour Low in Gluten Content—Ernst Komm to Theodore Schlütersen, Dresden A, Germany. No. 1,974,028. Sept. 18, 1934.

Yeast Grown in Wort Containing a Mucic-Acid Compound — John Raymond White, Long Island City, N. Y. No. 1,974,937. Sept. 25, 1934.

Preparation of a Dry Yeast Containing About 16 Per Cent Water and Mucic Acid—John Raymond White, New York, N. Y. No. 1,974,938. Sept. 25, 1934.

Chewing-Gum Base Prepared by Adding Pulverized Coumarone Resin and Hard Hydrogenated Oil to Uncoagulated Latex—Franklin V. Canning to Sweets Laboratories, Inc., New York, N. Y. No. 1,975,447. Oct. 2, 1934.

Method of Making Butter Substitutes by Using Partially Oxidized Soya Bean Oil as Dispersing Agent—Hans W. Vahlteich to Best Foods, Inc., New York, N. Y. No. 1,975,672. Oct. 2, 1934.

Method of Treating Solid Food Products With Fluid Germicides During Treatment With Ultra-Violet Rays From a Heat Source—Samuel Tranin and Rudolph M. Snyder to Samuel Tranin, Kansas City, Mo. No. 1,975,991. Oct. 9, 1934.

Production of a Relatively Non-Hydroscopic Dry Product From a Weak Gel of Pectic Acid With Lemon Juice—Clarence W. Wilson, Corona, Calif., to California Fruit Growers' Exchange, Los Angeles, Calif. No. 1,975,998. Oct. 9, 1934.

Sausage Having Appearance of Fresh Pork Sausage Made From Smoked Bacon—Frank Walter, Milwaukee, Wis. No. 1,976,165. Oct. 9, 1934.

Chocolate—A Food; a Confection; an Ingredient

(Concluded from page 502)

"cocoa butter," but nowadays the buyer desires cocoa butter with certain qualities, such as: low melting point, high melting point, strong cocoa-butter flavor, weak cocoa-butter flavor, low free-fatty-acid content, and other qualities. *The day is not far off when the manufacturer will have to segregate his cocoa butter into various types to meet the demands of the users.*

The handling of chocolate is an art that requires very careful attention to details. When properly molded, chocolate possesses a good gloss which if not protected soon becomes dull in appearance. Both heat and moisture rapidly destroy this gloss or luster and give rise to a mottled and gray surface commonly known as "bloom." This bloom may develop in a short time unless the chocolate is carefully melted, carefully tempered and carefully cooled when manufactured. If chocolate is cooled too rapidly, the outer surface will solidify, trapping residual heat within the cake. This heat will gradually cause fat bloom. The proper temperature for storing chocolate is 55 to 65 deg. F., and the proper relative humidity 60 to 65 per cent. At 77 deg. F. the low melting-point fractions of cocoa butter begin to soften. If chocolate is kept for an appreciable length of time at this temperature an extreme condition of "fat bloom" results, and the chocolate mass may disintegrate.

If chocolate is taken from a cold into a warm room or placed in a damp room, a film of moisture will form on the surface. This moisture will dissolve the fine sugar particles and form a thin layer of syrup. On evaporation of the moisture, the sugar recrystallizes in minute form and gives the chocolate a rough, grayish appearance sometimes mottled by red-brown spots due to the coloring matter of the chocolate, which also may have dissolved in the moisture. This phenomenon is known as "sugar bloom."

If chocolate is stored in a warm place or exposed to heat, the cocoa butter softens or melts, expands and makes its way through the spaces between the sugar and cocoa matter particles to the surface, On cooling, the butter crystallizes and forms a grayish white film which is greasy to the touch. This type of bloom is known as "fat bloom," and is a source of trouble during the summer months. Although the flavor usually is not impaired, the grayish appearance of the chocolate is considered by the public to be a sign of staleness, and results in great economic losses to the manufacturer. Chocolate, especially milk chocolate, picks up foreign odors readily and should be stored in a clean room with free circulation of air.

For bulk use, chocolate is molded into 10-lb. cakes individually wrapped in paper bags or wrapping paper and packed in burlap bags containing 200 lb. (20 cakes). The bottom and top cakes are protected by strips of fiber boards to reduce breakage. Chocolate also is packed in 50-lb. fiber cartons and in 100- to 150-lb. wooden cases.

For the consumer trade, bar chocolate is wrapped in waxed paper, greaseproof parchment paper, foil-lined paper, and in foil. The outside wrapping consists of either artistically colored labels or thin cardboard boxes. For packaging high-grade chocolates, lithographed tin boxes and cardboard boxes are used with or without an outer transparent wrapping. Small solid chocolates of various shapes and designs are either sold loose in 5-lb. boxes to 200-lb. barrels unwrapped or individually wrapped in plain or colored foil. Hollow-mold goods are sold unwrapped, foil or transparent wrapped, and may or may not be placed in light cardboard boxes.

Cocoa butter is sold in bulk, in bales, wrapped in a manner similar to chocolate coating, except that the cakes usually weigh approximately 20 lb., and a bale approximately 200 lb. For export, cocoa butter is sold in tin-lined containers of approximately 224 lb. For the retail trade, cocoa butter is sold in ½-lb. cakes and in stick or "finger" form.